

# **Exhibit “A”**

5/20/14

**STATES DISTRICT COURT  
FOR THE DISTRICT OF NEW JERSEY**

SMART VENT PRODUCTS, INC.,	:	
Plaintiff,	:	CIVIL ACTION NO.:
	:	1:13-cv-05691-JBS-KMW
v.	:	
	:	
CRAWL SPACE DOOR	:	
SYSTEM INC., d/b/a CRAWL	:	
SPACE DOOR SYSTEMS, INC.	:	
Defendant.	:	

**PLAINTIFF’S RESPONSES AND OBJECTIONS TO  
DEFENDANT’S FIRST SET OF DOCUMENT REQUESTS**

Smart Vent Products, Inc. (“Smart Vent” or “Plaintiff”) hereby answers the First Set of Document Requests served by defendant Crawl Space Door System, Inc. d/b/a Crawl Space Door Systems, Inc. (“Crawl Space Doors”). Smart Vent is continuing to review its files and, consistent with its obligations under the Rules governing this Court, will supplement its responses as necessary.

**PRELIMINARY STATEMENT**

Smart Vent makes the responses set forth herein subject to and without waiver of:

(1) all questions as to the admissibility into evidence of the responses; (2) the right to object to further discovery directed to the subject matter of Defendant’s requests; (3) the right to make additional objections or to seek protective orders in the event additional review of files and pretrial preparation result in further information with respect to any of Defendant’s requests; and (4) the right to at any time revise, correct, add to or clarify any of the responses and/or objections contained herein, consistent with Fed.R.Civ.P. 26.

Plaintiff also declares that it may use any document produced in this action, whether by plaintiff, defendant or a third party witness, to support any of its claims and/or defenses in this action.

These answers are also designated as CONFIDENTIAL pursuant to the terms of the Discovery Confidentiality Order entered by the Court on May 27, 2014.

### **GENERAL OBJECTIONS**

1. Plaintiff objects to the requests to the extent that they seek, or may be construed to seek, any response that is immune from discovery by reason of the attorney-client privilege, the attorney work product doctrine, the trade secret privilege, or which is otherwise privileged or protected from disclosure.
2. Plaintiff objects to Defendant's "Definitions" and "Instructions" to the extent that Defendant seeks to impose burdens and obligations on Plaintiff in excess of those contemplated by the Federal Rules of Civil Procedure or this Court's Local Rules.
3. Plaintiff objects to each request to the extent that it is vague, ambiguous, unduly burdensome, overly broad and/or not reasonably calculated to lead to the discovery of admissible evidence.
4. Plaintiff objects to the requests to the extent that they seek or may be construed to seek, proprietary, trade secret and confidential information and/or documentation.
5. Plaintiff objects to the requests as overly broad, unduly burdensome and oppressive to the extent that they require Smart Vent to conduct extensive research and review to determine whether any responsive documents exist, as well as due to the

significant time, burden and expense in connection with producing any such responsive documents.

6. Plaintiff objects to each request to the extent that any such request incorrectly assumes that Plaintiff has knowledge of any third-party's actions.

7. Plaintiff objects to each request that includes any of the terms "relate to," "relating to," and "related to." The requests that include any of those terms are unduly burdensome because they require unreasonable search and analysis.

8. Plaintiff objects generally to each request to the extent that the response would require Smart Vent to violate any confidentiality obligation Smart Vent owes to any third party, including but not limited to obligations created by any non-disclosure agreement.

9. Plaintiff objects to each request that seeks discovery concerning agreements or communications between Smart Vent and third parties not at issue in this litigation.

10. Plaintiff objects to each request to the extent that any such request assumes an unproved or unspecified agency relationship between Plaintiff and any other entity.

11. Any response provided herein is to be construed as relating only to the information responsive to the request that is not otherwise subject to the general objections or any specific objection.

12. Plaintiff reserves the right to seasonably supplement these responses.

13. These general objections shall be deemed to be incorporated in full into each of the responses set forth below. To the extent that any of these general objections are



cited in a specific objection herein, those citations are provided as particularly applicable to the specific request, and are not to be construed as a waiver of any other general objection applicable to information falling within the scope of that request or any other request.

### **RESPONSES TO REQUESTS FOR PRODUCTION**

**Request No. 1.** All documents identified in response to Crawl Space's First Set of Interrogatories to Smart Vent.

#### **Response**

Smart Vent objects to this request to the extent any identified documents are equally available and accessible to AAA Louvers. Notwithstanding this objection, discovery is ongoing, and Smart Vent reserves the right to supplement this response.

**Request No. 2.** All documents that Smart Vent may rely upon in any hearing or at trial in this matter.

#### **Response**

Smart Vent objects to this request to the extent this request seeks documents protected by the attorney-client or work-product privileges. Smart Vent further objects to this request to the extent it is premature, and seeks documents not reasonably related to lead to the discovery of admissible information. Notwithstanding such objections, discovery is ongoing, and Smart Vent reserves the right to supplement this response.

**Request No. 3.** All expert reports which Smart Vent intends to rely upon in this action.

**Response**

Smart Vent objects to this request to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine, and further objects to the extent this request is premature.

Notwithstanding such objections, Smart Vent will supplement this response in accordance with its discovery obligations.

**Request No. 4.** Two exemplars of each flood vent manufactured, distributed, or sold by Smart Vent.

**Response**

Smart Vent will supplement this response with Smart Vent products.

**Request No. 5.** All documents exchanged between Smart Vent's counsel, Smart Vent, or any other individual acting on Smart Vent's behalf, and any expert retained by Smart Vent in this action, that relate to such expert's compensation.

**Response**

Smart Vent objects to this request to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Smart Vent further objects to this request to the extent it seeks documents not reasonably related to lead to the discovery of admissible evidence. Smart Vent further objects to this request as premature. Notwithstanding such objections, discovery is ongoing, and should documents responsive to this request be identified, discoverable, and not privileged, Smart Vent will supplement this response.

**Request No. 6.** All documents exchanged between Smart Vent's counsel, Smart Vent, or any other individual acting on Smart Vent's behalf, and any expert retained by Smart Vent in this action which identifies facts or data provided to such expert to consider in forming the expert's opinion.

**Response**

Smart Vent objects to this request to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Smart Vent further objects to this request as premature, and to the extent it seeks documents not reasonably related to lead to the discovery of admissible evidence. Notwithstanding such objections, discovery is ongoing, and should documents responsive to this request be identified as discoverable and not privileged, Smart Vent will supplement this response.

**Request No. 7.** All documents exchanged between Smart Vent's counsel, Smart Vent, or any other individual acting on Smart Vent's behalf, and any expert retained by Smart Vent in this action which identifies any assumptions provided to such expert to consider in forming the expert's opinion.

**Response**

Smart Vent objects to this request to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Smart Vent further objects to this request to the extent it seeks documents not reasonably related to lead to the discovery of admissible evidence. Notwithstanding such objections, discovery is ongoing, and should discoverable documents responsive to this request be identified, Smart Vent will supplement this response.

**Request No. 8.** As set forth in Smart Vent's initial disclosures, all documents relating to "materials from FEMA and NFIP."

**Response**

Smart Vent objects to this request to the extent any identified documents are equally available and accessible to AAA Louvers, and further objects to the extent this request is overbroad, unduly burdensome, and vague and ambiguous. Notwithstanding these objections, see Technical Bulletin 1, attached to Complaint as Exhibit A; and NFIP Underwriting Bulletin W-08086, attached to Complaint as Exhibit B. As discovery is ongoing, Smart Vent reserves the right to supplement this response.

**Request No. 9.** As set forth in Smart Vent's initial disclosures, all documents relating to "marketing materials made available by Crawl Space Doors."

**Response**

Smart Vent objects to this request to the extent any identified documents are equally available and accessible to AAA Louvers, and further objects to the extent this request is overbroad, unduly burdensome, and vague and ambiguous. Notwithstanding these objections, Smart Vent will provide responsive documents.

**Request No. 10.** As set forth in Smart Vent's initial disclosures, all documents relating to "the trademark registration and filings made to the U.S. Patent and Trademark Office on behalf of Smart Vent."

**Response**

Smart Vent objects to this request to the extent any identified documents are equally available and accessible to AAA Louvers. Notwithstanding this objection, Smart Vent will provide responsive documents.

**Request No. 11.** As set forth in Smart Vent's initial disclosures, all documents relating to "Crawl Space Doors" marketing of flood vents, including calculations concerning net open area, 'certifications' signed by engineers employed by Crawl Space Doors, flyers,

and other advertisements, and related documents.”

**Response**

Smart Vent objects to this request to the extent any identified documents are equally available and accessible to AAA Louvers and further objects to the extent this request is overbroad, unduly burdensome, and vague and ambiguous. Notwithstanding these objections, Smart Vent will provide responsive documents.

**Request No. 12.** All documents supporting Smart Vent’s claim for damages including, but not limited to, Smart Vent’s claim for recovery of lost profits.

**Response**

Smart Vent objects to this request to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Smart Vent further objects to this request as burdensome, and premature. Notwithstanding such objections, Smart Vent will supplement this Response when non-privileged documents become available, in accordance with the discovery schedule.

**Request No. 13.** All documents sufficient to identify the total sales for all models of Smart Vent’s flood vents.

**Response**

Smart Vent objects to this request to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Smart Vent further objects to this request as burdensome, premature, seeking documents not yet created, and not reasonably related to lead to the discovery of admissible evidence. Notwithstanding such objections, Smart Vent will supplement this Response when non-privileged

documents become available, in accordance with the discovery schedule and the Local Rules.

**Request No. 14.** All documents sufficient to identify the cost of goods sold for all models of Smart Vent's flood vents.

**Response**

Smart Vent objects to this request to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Smart Vent further objects to this request as burdensome, overbroad, and premature. Notwithstanding such objections, Smart Vent will supplement this Response in accordance with the discovery schedule.

**Request No. 15.** All documents sufficient to identify the profits generated by Smart Vent as a result of all sales of Smart Vent's flood vents.

**Response**

Smart Vent objects to this request to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Smart Vent further objects to this request as burdensome, overbroad, and premature. Notwithstanding such objections, Smart Vent will supplement this Response.

**Request No. 16.** All documents sufficient to identify the names of all of Smart Vent's customers that have purchased foundation flood vents from Smart Vent.

**Response**

Smart Vent objects to this request to the extent this request is not reasonably related to lead to the discovery of admissible evidence, and further objects to this request as burdensome and overbroad.

**Request No. 17.** All evaluation reports issued by the International Code Council, or its subsidiaries, relating to any foundation flood vent manufactured, distributed, or sold by Smart Vent.

**Response**

Smart Vent objects to this request as burdensome and overbroad, and not reasonably related to lead to the discovery of admissible evidence. Notwithstanding such objections, Smart Vent will supplement this Response.

**Request No. 18.** All evaluation reports issued by a registered design professional relating to any foundation flood vent manufactured, distributed, or sold by Smart Vent.

**Response**

Smart Vent objects to this request as vague, burdensome, overbroad, and not reasonably related to lead to the discovery of admissible evidence. Notwithstanding such objections, Smart Vent will supplement this Response.

**Request No. 19.** All documents supporting Smart Vent's contention that Crawl Space overstates the amount of enclosed space that Crawl Space's flood vents service.

**Response**

Smart Vent objects to this request to the extent this request seeks documents protected by the attorney-client or work-product privileges. Smart Vent further objects to this request as overbroad and burdensome. Notwithstanding such objections, Smart Vent

will supplement this Response in accordance with the discovery schedule and the Local Rules.

**Request No. 20.** All documents supporting Smart Vent's contention that Crawl Space's flood vents do not comply with FEMA, NFIP, and TB-1 regulations, as well as ASCE and IBC requirements.

**Response**

Smart Vent objects to this request as overbroad, vague, ambiguous, overly burdensome, and to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Notwithstanding such objections, Smart Vent will supplement this Response in accordance with the discovery schedule and the Local Rules.

**Request No. 21.** All documents exchanged between Smart Vent on the one hand, and Sunvent Industries or Sylro Sales Corp. on the other, concerning Crawl Space's flood vent products.

**Response**

Smart Vent objects to this request as overbroad, vague, and to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Notwithstanding such objections, Smart Vent reserves the right to supplement this Response.

**Request No. 22.** All documents relating to the relationship between Smart Vent on the one hand, and Sunvent Industries or Sylro Sales Corp. on the other.



**Response**

Smart Vent objects to this request as overbroad, vague and ambiguous, oppressive, and to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Notwithstanding such objections, Smart Vent reserves the right to supplement this Response.

**Request No. 23.** All documents exchanged between Smart Vent and any third party concerning Crawl Space's flood vent products.

**Response**

Smart Vent objects to this request as overbroad, vague and ambiguous, oppressive, and to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Notwithstanding such objections, discovery is ongoing, and Smart Vent reserves the right to supplement this Response.

**Request No. 24.** All internal Smart Vent documents relating to Crawl Space's flood vent products.

**Response**

Smart Vent objects to this request as overbroad, vague and ambiguous, oppressive, and to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Notwithstanding such objections, Smart Vent reserves the right to supplement this Response.

**Request No. 25.** All documents relating to how Smart Vent calculates the net open area for Smart Vent's flood vents.

**Response**

Smart Vent objects to this request as not reasonably related to lead to the discovery of admissible evidence, and to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Notwithstanding such objections, Smart Vent reserves the right to supplement this Response.

**Request No. 26.** All documents supporting Smart Vent's contention that Crawl Space falsely advertises its products as being protected by a utility patent.

**Response**

Smart Vent objects to this request as overbroad, vague and ambiguous, unduly burdensome, and to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Notwithstanding such objections, Smart Vent reserves the right to supplement this Response.

**Request No. 27.** All documents concerning the prosecution, registration, and maintenance of U.S. Trademark Registration No.: 2,464,134 ("the '134 Registration").

**Response**

Smart Vent objects to this request as overbroad, vague and ambiguous, unduly burdensome, and to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Smart Vent further objects to this request as seeking documents equally available and accessible to defendant. Notwithstanding such objections, Smart Vent reserves the right to supplement this Response.

**Request No. 28.** All documents relating to all office actions issued by the United States Patent and Trademark Office in connection with the trademark application which resulted in the issuance of the '134 Registration including, but not limited to, all responses thereto.

**Response**

Smart Vent objects to this request as overbroad, vague and ambiguous, unduly burdensome, and to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Smart Vent further objects to this request as seeking documents equally available and accessible to defendant. Notwithstanding such objections, Smart Vent reserves the right to supplement this Response.

**Request No. 29.** All documents supporting Smart Vent's contention that the '134 Registration is incontestable including, but not limited to, all documents reflecting five (5) years of consecutive use of the phrase "SMART VENT" prior to January 2007.

**Response**

Smart Vent objects to this request as overbroad, vague and ambiguous, unduly burdensome, and to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Smart Vent further objects to this request as seeking documents equally available and accessible to defendant. Notwithstanding such objections, Smart Vent reserves the right to supplement this Response.

**Request No. 30.** All documents supporting Smart Vent's contention that Smart Vent's first use of the phrase "Smart Vent" in interstate commerce was on February 15, 2000.

**Response**

Smart Vent objects to this request as overbroad, vague and ambiguous, unduly burdensome, and to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Smart Vent further objects to this request as seeking documents equally available and accessible to defendant. Notwithstanding such objections, Smart Vent reserves the right to supplement this Response.

**Request No. 31.** All documents concerning all assignments or licenses relating to the '134 Registration.

**Response**

Smart Vent objects to this request as overbroad, vague and ambiguous, unduly burdensome, and to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Notwithstanding such objections, Smart Vent reserves the right to supplement this Response.

**Request No. 32.** All documents concerning the merger of Smart-Vent, Inc. and SmartVENT Products, Inc.

**Response**

Smart Vent objects to this request as overbroad, vague and ambiguous, unduly burdensome, and to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Notwithstanding such objections, Smart Vent reserves the right to supplement this Response.

**Request No. 33.** All documents relating to Smart Vent's contention that Crawl Space uses the phrase "SMART VENT" as a "tag" and "meta-tag" in the coding of its website.

**Response**

Smart Vent objects to this request as overbroad, vague and ambiguous, unduly burdensome, and to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Smart Vent further objects to this request as seeking documents equally available and accessible to defendant. Notwithstanding such objections, Smart Vent reserves the right to supplement this Response.

**Request No. 34.** All documents relating to Smart Vent's contention that Smart Vent's reputation has been injured as a result of Crawl Space's alleged use of the phrase "SMART VENT".

**Response**

Smart Vent objects to this request as overbroad, vague and ambiguous, unduly burdensome, and to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Smart Vent further objects to this request as seeking documents equally available and accessible to defendant. Notwithstanding such objections, Smart Vent reserves the right to supplement this Response.

**Request No. 35.** Copies of all correspondence or communications with Smart Vent's customers which reference FEMA compliancy.

**Response**

Smart Vent objects to this request as overbroad, vague and ambiguous, and burdensome. Notwithstanding such objections, Smart Vent reserves the right to supplement this Response.

**Request No. 36.** All agreements that Smart Vent entered into with any individual or entity for the manufacture, distribution, or sale of flood vents.

**Response**

Smart Vent objects to this request as overbroad, vague and ambiguous, and to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Notwithstanding such objections, discovery is ongoing, and Smart Vent reserves the right to supplement this Response.

**Request No. 37.** All documents exchanged between Smart Vent, or any individual or entity associated with Smart Vent, and Architectural Testing, Inc. concerning any Crawl Space.

**Response**

Smart Vent objects to this request as vague and ambiguous, and to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. However, Smart Vent reserves the right to supplement this Response.

**Request No. 38.** All documents supporting Smart Vent's representation on Smart Vent's website that "Smart Vent Products, Inc. is the worldwide leading manufacturer of foundation flood venting systems which takes pride in having the only FEMA-Accepted and ICC-ES Certified Flood Vent and by using the best materials available."

**Response**

Smart Vent objects to this request to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Smart Vent further objects to this request as burdensome, vague and ambiguous, overbroad, and not reasonably related to lead to the discovery of admissible evidence. Notwithstanding such objections, Smart Vent reserves the right to supplement this Response.

**Request No. 39.** All documents which relate to the flood vent market including, but not limited to, competition within the market.

**Response**

Smart Vent objects to this request to the extent this request seeks documents protected by the attorney-client privilege or work-product doctrine. Smart Vent further objects to this request as burdensome, vague and ambiguous, overbroad, and not reasonably related to lead to the discovery of admissible evidence.

**Request No. 40.** All documents exchanged between any individual or entity affiliated with, or retained by, Smart Vent and any engineer associated with Crawl Space, regarding the net open area of Crawl Space's flood vents.

**Response**

Smart Vent objects to this request as burdensome, vague and ambiguous, overbroad, and not reasonably related to lead to the discovery of admissible evidence. Notwithstanding these objections, Smart Vent reserves the right to supplement this response.

**Request No. 41.** All documents concerning the investigation of Crawl Space's flood vents by any state or federal agency.

**Response**

Smart Vent objects to this request as burdensome, vague and ambiguous, overbroad, and not reasonably related to lead to the discovery of admissible evidence.

Notwithstanding these objections, Smart Vent reserves the right to supplement this response.

**Request No. 42.** All documents concerning Smart Vent's use of a video on its website containing footage of the installation of a Crawl Space flood vent including, but not limited to Smart Vent's: (i) preparation and shooting of the video; (ii) decision to use the video on its website; and (iii) decision to remove the video from its website.

**Response**

Smart Vent objects to this request as burdensome, vague and ambiguous, overbroad, and not reasonably related to lead to the discovery of admissible evidence, and to the extent it calls for documents protected by the attorney-client privilege or work-product doctrine. Notwithstanding these objections, Smart Vent reserves the right to supplement this response.

Respectfully submitted,  
s/Anthony J. DiMarino, III/  
Anthony J. DiMarino, III  
Emmett S. Collazo  
A.J. DiMarino, P.C.

Counsel for Plaintiff Smart Vent Products, Inc.

Dated: May 30, 2014



CERTIFICATE OF SERVICE

I certify that on May 30, 2014, I served by electronic mail a copy of the attached Responses to Crawl Space Door System, Inc. d/b/a Crawl Space Door Systems, Inc.'s First Set of Document Requests to Smart Vent Products, Inc. to the attorneys for Defendant at the below address:

Steve Smirti, Jr., Esq.  
Michael C. Cannata, Esq.  
926 RXR Plaza  
Uniondale, NY 11556-0926

Dated: May 30, 2014

/ Emmett S. Collazo/  
Emmett S. Collazo

# **Exhibit “B”**

**Mike Graham**

---

From: Merrill, Thomas Lad  
Sent: Mon 3/03/2014 10:22 PM (GMT 0)  
To: Mike Graham  
Cc:  
Bcc:  
Subject: RE: ICC call and preparation for Friday.

Hi Mike,

Just got off the phone with James at Cd-Adapco

He's going to send me the files and then I will try to run the simulations.  
He thought this would be the easiest and most cost effective way to do it.

Deliverable: C\_d values for our vent and louvered vent. This can then be compared to video. If the comparison shows similarity -- we can do A LOT less physical testing -- saving time and money.

===

On the video front -- these video's recently sent by Brian show the louvered vent under slow flow or small differential height conditions.

"Hi Tom,

<https://www.yousendit.com/download/eINLT213NDRTSUNFTmNUQw>

Sure, click on the above link and then click "Download" next to each video. There are two CSD videos, one with debris and one without."

===

Are there any other videos showing the standard -- one chamber full the other empty tests?

Thanks Mike,  
tom

Tom Merrill | Associate Professor | Mechanical Engineering | Rowan University  
201 Mullica Hill Rd., Glassboro, NJ 082028 | Rm 231 | Rowan Hall  
O: 856.256.5343 | C: 609.558.1169 | [merrill@rowan.edu](mailto:merrill@rowan.edu) | <http://tmmerrill.pbworks.com/>

-----Original Message-----

From: Mike Graham [mailto:mgraham@smartvent.com]  
Sent: Friday, February 28, 2014 10:26 AM  
To: Merrill, Thomas Lad  
Subject: Re: ICC call and preparation for Friday.

OK BUDDY, I THINK WE ARE AS GOOD AS CAN BE EXPECTED. THANKS MIKE

On 2/28/14, 10:18 AM, "Merrill, Thomas Lad" <Merrill@rowan.edu> wrote:

>Mike  
>  
>I'm running out the door. Everything looks good.  
>  
>Just realize that the plot of C\_d vs time\_elapsed ASSUMES a 25ft^2  
>chamber footprint.  
>  
>This IS the value that BILL uses.  
>  
>Take care & good luck. Thinking +.

>tom  
>  
>

>Tom Merrill | Associate Professor | Rowan University - Mechanical  
>Engineering Rm 231 Rowan Hall | 201 Mullica Hill Rd, Glassboro NJ  
>08028 | 856 256  
>5343

>  
> \_\_\_\_\_

>From: Mike Graham [mgraham@smartvent.com]  
>Sent: Friday, February 28, 2014 9:54 AM  
>To: Rebecca Quinn; Bill Coulbourne  
>Cc: Merrill, Thomas Lad  
>Subject: Re: ICC call and preparation for Friday.

>  
>Attached is the PP to use as a path or agenda for the meeting.  
>At 10 let just discuss a quick strategy.

>  
>Call 605 475 4810 then 793343#

>  
>From: <Merrill>, "Thomas L."  
><Merrill@rowan.edu<mailto:Merrill@rowan.edu>>  
>Date: Friday, February 28, 2014 at 1:25 AM  
>To: Mike Graham <mgraham@smartvent.com<mailto:mgraham@smartvent.com>>,  
>Rebecca Quinn <rquinn@earthlink.net<mailto:rquinn@earthlink.net>>,  
>Bill Coulbourne

><bill@coulbourneconsulting.com<mailto:bill@coulbourneconsulting.com>>  
>Cc: Tom Little <tlittle@smartvent.com<mailto:tlittle@smartvent.com>>  
>Subject: RE: ICC call and preparation for Friday.  
>  
>Hi everyone,  
>  
>Please take a look at the attached file demonstrating that the Smart  
>Vent testing can predict reasonable C<sub>d</sub> estimates with debris.  
>  
>While it's only one test I do think we have demonstrated that our  
>performance tests can be used to predict C<sub>d</sub>.  
>  
>Please reach back if you have questions.  
>  
>I hope this is helpful.  
>tom  
>  
>  
>Tom Merrill | Associate Professor | Mechanical Engineering |  
>Rowan University  
>201 Mullica Hill Rd., Glassboro, NJ 082028| Rm 231 | Rowan Hall  
>O: 856.256.5343| C: 609.558.1169 |  
>merrill@rowan.edu<mailto:merrill@rowan.edu> |  
><http://tmmerrill.pbworks.com/>  
>  
>  
>  
>From: Mike Graham [mailto:mgraham@smartvent.com]  
>Sent: Wednesday, February 26, 2014 6:58 PM  
>To: Merrill, Thomas Lad; Rebecca Quinn; Bill Coulbourne  
>Subject: ICC call and preparation for Friday.  
>  
>I had a good discussion with Gary this morning in preparation for  
>Fridays call. He is the VP and a reasonable person. We both agreed that  
>the Friday call will be between Rebecca, Bill, Gary and me. He understand  
>the issues with the staff engineer and agrees he wants to listen. He  
>also agreed that he would study all of the documents that I sent him  
>this morning. Most importantly the description that Rebecca Drafted 6"  
>hole covered with a slotted cap.  
>  
>When I asked him why his guy went back and is questioning already  
>certified products, Gary said they don't like to do this but when they  
>find issues that are so blatantly incorrect they have a duty to  
>investigate.  
>  
>

>In our conversation today these are the three issues the icc just don't  
>understand and don't agree with:  
>  
> 1. in their mind our performance tank test does not test Cd it only  
>tests if the vent functions properly. I argued that Cd means flow and  
>our tank is sized and water is flowing to test just that, the Cd. He  
>said we don't think so and that's why we didn't increase the flow  
>during the Ac revision hearings. I thought that was the entire idea  
>behind the performance test. Can we show how they connect? We need to  
>show that our performance test at both slow and fast flow proves that  
>our Cd is correct. If not, wouldn't it have failed?  
> 2. He said in their mind Table 2-2 Opening shape and condition means  
>the gross area. He said the net area is used in the calculation. Again  
>I referenced the 6<sup>2</sup> Rebecca pipe reference that he did not read yet. Is  
>there some other document that helps explain this? Page 40 talks about  
>where the Cd is derived from. They reference rectangular Weir and a V  
>notch or Trapezoidal Weir. See below. This shows the opening shape as  
>is in the description of table two, "Opening Shape and Condition". The  
>shape is clearly the area that water can flow into and has nothing to  
>do with the walls next to it. It also shows a free flowing opening I.E  
>not screened.  
> 3. The stacker issue encompasses two questions:  
>a: Gary said no where does ASCE say you can stack vents more then 12<sup>2</sup>  
>high. I explained that in 05 when we had this approved by the ICC,  
>FEMA gave the ICC direction in a memo and incorporated this into TB1. I  
>explained that it was normal for non engineered openings to be 24<sup>3</sup> tall  
>back then and as long as they are below the BFE its acceptable. He was  
>open to seeing TB1. See Rebecca's letter from 05. I did not share this  
>with Gary.  
>b: He also said that if a stacked vent is actually 4 rectangular  
>openings; two on top; and two on bottom, how can the CD be the same as  
>one opening that is the sum of the 4. He said its obvious that water  
>hitting the center rails will slow it down so the cd should be less  
>then the sum of all 4.  
>  
>Below is tb1 see page 18 for the stackable reference.  
>  
>[http://images.smartvent.com/images/uploads/codes\\_and\\_certs/fema-tb-1.pdf](http://images.smartvent.com/images/uploads/codes_and_certs/fema-tb-1.pdf)  
>f  
>  
>Below this diagram is my last email to them for reference.  
>  
>  
>[cid:image002.png@01CF3423.21537110]  
>  
>

>

>

>From: Mike Graham [mailto:mgraham@smartvent.com]

>Sent: Monday, February 17, 2014 9:36 AM

>To: Shahin Moinian

>Subject: Re: SmartVent

>

>Dear Mr. Moinian, your comments on our relationship are much appreciated.

>In my 13 years we have built our business around honesty and integrity

>and have built confidence throughout the marketplace by our trusted

>relationship with the ICC and FEMA. I called Mr. Sims because he knows

>our history and knows the struggles that we were forced to endure when

>the ICC merged. He knows the year and a half battle to certify our

>product and as a matter of fact the wood wall and stacked model along

>with the AC was part of that dramatically laborious and costly process.

>Yet in the end we thought the result would be a stable ICC ESR.

>

>History:

>In a review with Mr. Mc Roy a few weeks ago I asked how the inclusion

>of "must submit calculations" to a the revised AC means we go to trial

>again. We spent two weeks researching the history of prior reviews on

>our coverage and performance testing to find that although the AC did

>not specically say submit calculations they were asked for and reviewed

>three different times over the course of 7 years. Yes the same calculations.

>At no time did any code change, at no time did our products change, and

>at no time did we have a law suit for defective products, and at no

>time ever have we even been given a report that our vents did not

>function as designed, actually we received multiple testimonies and

>awards that our products have saved many peoples homes. When I asked

>Mr. Mc Roy to review the history on our previous successful testimony

>he said "are you sure you want me to look at the past reviews, because

>I may find more mistakes". I think my request was fair and his threat came across clear.

>We spent hours trying to draft our history and prove that your inquest

>questions have been asked many times. This historical work fell on deff

>ears and was ignored.

>

>In closing history, I would appreciate you to consider the

>ramifications to product manufacturers when their competitors add the

>requirement in words to existing AC's "must submit calculations". This

>once stable ICC ES evaluation that is the core of business stability is

>now unpredictable based on the Staff Engineers re-exam. On Friday I

>spoke to the technical officers of three large manufacturing companies

>that hold multiple reports, and they were all shocked.

>

>In our very detailed submission to Mr. Mc Roy we set out to prove our

>calculations were accurate and conservative. The work over the past

>weeks has been revolved around additional testing and detailed computer  
>modeling to support detailed certifications from a PHD and well  
>respected flood expert that our Cd is accurate. Both of these experts  
>are different then the engineer that performed the original  
>calculations and performance testing, and all three arrived at the same  
>conclusion, that our .44 Cd is correct for all models including our  
>stackers and wood wall models. In fact they agree that .44 Cd could have been larger.  
>Performance testing in the fall showed that vents tested at flow rates  
>20 times the standard still passed the debris test. Its the reason we  
>argued so vehemently at the revisions hearing. Why would we argue to  
>increase the flow if we were overrating our coverage?  
>  
>So where is the disconnect. Your attachment makes it clear that your  
>measuring the gross area to get the shape for the table 2-2 chart and  
>we and the industry measures the "net area" or the area that water  
>flows through. Attached is a revised copy of the sheet you labeled  
>"From submitted certification" Figure 1 and 2. In the model in figure  
>2 - You used 8- 3/4 x 14-1/2 width to height ratio of 13.49 : 8.425=  
>1.6 : 1 the gross size.  
>We used 13.490 x 2.665 and 13.490 x 3.0 giving us two rectangular, long  
>axis horizontal, short axis vertical at ratios of 5.06:1 and 4.496:1  
>Clearly the horizontal is twice the vertical.  
>In the same way the stacker has four rectangular slots that water flows  
>through not one giant square.  
>If this was the standard then instead of using 76 sq/in of net open  
>area for our flow calculation we would have used a much larger gross  
>area, but that does not make any sense.  
>  
>In closing, I am hopeful that your kind words about our long  
>relationship mean you will review what I am submitting and unlike Mr.  
>Mc Roy you will be open to listening to our explanation. It's the same  
>explanation that has been accepted by many of your engineers since 2003  
>and is the standard in the flood engineering world. Also please note  
>that my call to Mr. Sims and this email to you is in an effort to clear  
>our good name, and save American Jobs. Yes these changes, if  
>implemented will cause chaos in the market and instability in our  
>business and in the ICC ESR process.  
>  
>Over the past two days I have asked both FEMA and ICC code experts to  
>weigh in, and all of them agree with measuring the net opening shape  
>not the gross area. Below is an explanation using some basic examples  
>to make our point.  
>We have also discussed and made a detailed submission to the ASCE 24  
>committee and are confident that the committee understands this  
>disconnect and will soon vote to clear up any confusion. My request is  
>two fold; one would be to please take a few minutes and review what I



>have submitted, and the example below, and two to consider that we have  
>worked dilligently to provide detailed technical performance data from  
>national experts. Unfortunately all of the performance data and expert  
>certifications were ignored and rectangular vs. square seems to be the  
>impasse. It was a very expensive waste of money and time, yet we were  
>confident that performance testing was the final decision maker. That  
>does not seem to matter.

>

>The March 15th deadline is soon approaching and I am confident that our  
>gross vs. net explanation will be acceptable, yet the ASCE 24 changes  
>will offer additional and non reputable clarification. With no pending  
>market defects, or customer complaints I would ask you to grant us an  
>additional 90 days to provide final accepted ASCE 24 language that I am  
>confident will answer all of your concerns, yet again I do feel like  
>our gross vs. net explanation will be acceptable.

>

>Thanks very much for your time and patience and I look forward to your  
>comments.

>Sincerely,

>

>Mike Graham

>

>

>Note from flood expert review:

>"This is getting beyond ridiculous. ASCE 24 isn't supposed to explain  
>all of the fluid mechanics behind something. It is not a primer on  
>basic fluid mechanics, our knowledge of which harks back centuries (I  
>myself have 5 texts books on the subject). They seem to lack a basic  
>understanding of fluid mechanics. A coefficient of discharge applies  
>to the orifice through which fluid flows. Thus it must apply to the  
>openings the net opening any solid obstruction is, by definition,  
>not part of the opening/orifice. The coefficient of discharge is a  
>function of the Reynolds number, which is based on the average velocity  
>in the pipe or through the orifice. The part that's blocked has no velocity.  
>(There is a point at which the solid, blocked part becomes negligible,  
>say a wire mesh, but then different characteristics of fluid flow  
>become important and thus mesh is treated differently each tiny  
>square isn't a separate orifice.)

>

>Suppose I have a 12" diameter pipe, it's easy to select the  $C_d = 0.6$ .  
>Now, suppose I put a cap on the end of the pipe and the cap has a  
>rectangular horizontal slot through which water can flow. Now the  
>discharge through the pipe is affected by the shape of the slot, and I  
>have to select a different  $C_d$ . Would ICC-ES have me ignore the cap and  
>slot, and make me use a coefficient for a circular orifice simply  
>because the pipe is circular? I should hope not! I would use a

>coefficient for the slot because that is the orifice through which  
>water flows. Now, if I put a cap on that has two slots separated by  
>solid material of the cap, I would have two orifices because the solid  
>material separates the two orifices. If the cap had one rectangular  
>slot and one square slot, I would compute the total discharge by  
>applying the formula to the rectangular slot and to the square slot,  
>and each would have a separate and different coefficient of discharge.  
>I would compute the discharge through each and then add the results to yield the total discharge.  
>  
>This is exactly what you're doing. Because the SV unit is designed so  
>that when functioning flow goes through two slots, the physics demands  
>that each slot is as a separate orifice, and thus each slot has a  
>coefficient of discharge. And for the stacker, which is simply two  
>individual devices that are affixed to the same frame, the calculations  
>for each slot don't change. For the wood-frame wall unit, the only  
>question is whether the horizontal dimension is twice or more the  
>vertical dimension (see ASCE 24, Table 2-2).  
>  
>24-05 2.6.2.2, #7, the factor  $A_o$  is the "Total net area of openings  
>required" -- if the result tells the user how much net opening is  
>provided by a device, then the only logical conclusion is that the NET  
>opening of the device is what's important.  
>  
>TB 1, in the description of nonengineered openings, illustrates the  
>same principle regarding net vs gross, where it is clear that if a  
>device with a faceplate is inserted into an 8x16 opening, the gross  
>8x16 openings is not measured, but the net open area of each "slot" in  
>the faceplate is measured. In the air flow industry, each of those  
>slots is treated as an orifice. Does ICC-ES make the air flow industry  
>use the "gross area/shape" including that portion that is obstructed,  
>when calculating air flow through a faceplate?"  
>  
>  
>  
>Mike Graham, CFM  
>  
>President  
>Smart Vent Products, Inc.  
>430 AndBro Dr. Unit 1  
>Pitman NJ 08071  
>Office 877-441 8368  
>Cell 609-744 4844  
><http://www.smartvent.com><<http://www.smartvent.com>>  
>[mgraham@smartvent.com](mailto:mgraham@smartvent.com)<<mailto:mgraham@smartvent.com>>  
>  
>Also see

><http://www.smartproductinnovations.com><<http://www.smartproductinnovations.com>>  
>com/>  
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>  
>From: Shahin Moinian <[SMoinian@icc-es.org](mailto:SMoinian@icc-es.org)<<mailto:SMoinian@icc-es.org>>>  
>Date: Thursday, February 13, 2014 at 5:16 PM  
>To: Mike Graham <[mgraham@smartvent.com](mailto:mgraham@smartvent.com)<<mailto:mgraham@smartvent.com>>>  
>Cc: Gary Nichols <[GNichols@icc-es.org](mailto:GNichols@icc-es.org)<<mailto:GNichols@icc-es.org>>>, Woods McRoy <[WMcRoy@icc-es.org](mailto:WMcRoy@icc-es.org)<<mailto:WMcRoy@icc-es.org>>>  
>Subject: SmartVent  
>  
>Dear Mr. Graham,  
>  
>I hereby thank you for the e-mail you sent to Mr. Dominic Sims, the ICC  
>CEO. I have discussed the matter with Mr. Woods McRoy and Mr. Gary  
>Nichols, the VP of Engineering. Following that discussion, we came to  
>the conclusion that despite of the fact that you have submitted a  
>revision to ASCE to modify their ASCE 24, so long as the revision is  
>not accepted, we feel it is prudent to stay with the current  
>requirements outlined in the aforementioned document. Sound  
>engineering judgment allows us to accept your value of 0.44 for the  
>coefficient of discharge for the 15.75 x 7.75 inch units rectangular  
>geometry. However, the same sound engineering judgment unfortunately  
>disallows us to use the coefficient of discharge of 0.44 for a  
>rectangular opening to be used for the 14 x 8.75 inch units and a  
>square opening (16 x 16 inch units) which is what two vents stacked up  
>on the top of each other will represent. Please also note that the  
>gate itself provides for additional friction which we have chosen to  
>ignore since the ASCE 24 does not speak to that in the table 2-2.  
>  
>Mr. Graham, please know that we treasure our relationship with you and  
>have done our utmost to find a solution to this product evaluation  
>challenge. However, considering the requirements outlines in ASCE 24,  
>we have not found any other solution to this challenge.  
>  
>We look forward to hearing from you.  
>  
>Warm regards,  
>  
>Shahin Moinian, P.E.  
>President  
>ICC Evaluation Service, LLC  
>Los Angeles Business/Regional Office

>5360 Workman Mill Road  
>Whittier, CA 90601  
>888-422-7233 x3559  
>cell: 1-562-331-4388  
>smoinian@icc-es.org<mailto:smoinian@icc-es.org>  
>  
>  
>[cid:image003.png@01CF3423.21537110]  
>  
>  
>  
>Notice: This message is intended only for the individual or entity to  
>which it is addressed and may be confidential and/or privileged. If  
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>hereby notified that any dissemination, distribution or copying of this  
>communication is strictly prohibited. If you have received this  
>communication in error, please notify the sender by return e-mail, and  
>delete the original message and all copies from your system. Thank you.  
>  
>  
>  
>Join us in Memphis for ICC's 2014 Committee Action Hearings in April.  
>Experience cdpACCESS in action and help ensure the 2015 International  
>Green Construction Code achieves the best in energy, water and cost  
>efficiencies from sustainable construction. Register  
>Now.<<http://go.iccsafe.org/I/25182/2014-02-03/4nr37>>  
>  
>  
>Join us in Memphis for ICC's 2014 Committee Action Hearings in April.  
>Experience cdpACCESS in action and help ensure the 2015 International  
>Green Construction Code achieves the best in energy, water and cost  
>efficiencies from sustainable construction. Register  
>Now.<<http://go.iccsafe.org/I/25182/2014-02-03/4nr37>>  
>

# Exhibit “C”

**UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NEW JERSEY**

SMART VENT PRODUCTS, INC., :  
:  
Plaintiff, : Civ. Action No.: 1:13-cv-05691  
:  
v. :  
:  
INITIAL DISCLOSURES  
:  
CRAWL SPACE DOOR :  
SYSTEM INC., d/b/a CRAWL :  
SPACE DOOR SYSTEMS, INC. :  
:  
Defendant. :

**RULE 26(a)(1) Disclosures**

Pursuant to Federal Rule of Civil Procedure 26(a)(1), Plaintiff Smart Vent Products, Inc. (“Smart Vent”) through its undersigned counsel, hereby provides its initial disclosures.

**I. WITNESSES**

The following individuals are likely to have discoverable information that Smart Vent may use to support its claims.

**Smart Vent**

Mike Graham  
Tom Little

These individuals are executives of Smart Vent and can be contacted through counsel. These individuals have knowledge of, among other items, the regulations applicable to the flood vent industry and the use of Smart Vent’s trademark.

**Crawl Space Doors Systems, Inc.**

William G. Sykes, Esq.

Mr. Sykes is the President of Crawl Space Doors Systems, Inc. and, upon information and belief, has knowledge of manufacturing, distribution, and marketing conduct by the company, as well as representations made by the company concerning its products.

**II. DOCUMENTS**

Smart Vent has documents, electrically stored information and tangible things which it may use to support its claims and defenses. These document include materials from FEMA and NFIP; marketing materials made available by Crawl Space Doors; the trademark registration and filings made to the U.S. Patent and Trademark Office on behalf of Smart Vent; documents relating to Crawl Space Doors' marketing of flood vents, including calculations concerning net open area, "certifications" signed by engineers employed by Crawl Space Doors, flyers, and other advertisements, and related documents.

**III. COMPUTATION OF DAMAGES CLAIMED.**

Smart Vent seeks the lost profits it experienced as the result of defendant's unfair competition and trademark infringement, the profits realized by the defendant through its unfair competition and trademark infringement, and its counsel fees and

costs. Smart Vent's damages include, but are not limited to, those available to Smart Vent under 15 U.S.C. §1117(a).

Smart Vent also seeks an injunction against defendant for the unfair competition and trademark infringement alleged in Plaintiff's complaint.

Smart Vent respectfully reserves the right to supplement and/or amend this computation of damages claimed upon continued discovery.


#### **IV. INSURANCE**

Not applicable.

Respectfully submitted,

Date:

2/14/14

  
\_\_\_\_\_  
Anthony J. DiMarino, III


Anthony J. DiMarino, III  
Emmett S. Collazo  
A.J. DiMarino, P.C.  
57 Euclid St., Suite A  
Woodbury, NJ 08096  
[ajd@dimarinolaw.com](mailto:ajd@dimarinolaw.com)  
[collazo@dimarinolaw.com](mailto:collazo@dimarinolaw.com)  
Phone: 856-853-0055  
FAX: 856-853-2866



CERTIFICATE OF SERVICE

I hereby certify that on February 14, 2014, the foregoing document was served on Defendant's counsel of record, as set forth below, by the electronic and regular mail.

Michael C. Cannata, Esq.  
Stephen J. Smirti, Esq.  
RIVKIN RADLER, LLP  
23 Main Street, Suite 158  
926 RXR Plaza  
Uniondale, NY 11556  
Counsel for Defendant

  
\_\_\_\_\_  
Anthony J. DiMarino, III, Esquire

# **Exhibit “D”**

**UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NEW JERSEY**

SMART VENT PRODUCTS, INC.,	:	
Plaintiff,	:	Civ. Action No.: 1:13-cv-05691
	:	
v.	:	SUPPLEMENTAL
	:	INITIAL DISCLOSURES
CRAWL SPACE DOOR	:	
SYSTEM INC., d/b/a CRAWL	:	
SPACE DOOR SYSTEMS, INC.	:	
Defendant.	:	

**RULE 26(a)(1) Disclosures**

Pursuant to Federal Rule of Civil Procedure 26(a)(1), Plaintiff Smart Vent Products, Inc. (“Smart Vent”) through its undersigned counsel, hereby supplements its Initial Disclosures as follows.

**INTRODUCTORY STATEMENT**

By making these supplemental disclosures, Smart Vent does not represent that it is identifying every document, tangible thing, or witness possibly relevant to this lawsuit, nor does Smart Vent waive its right to object to the production of any documents or tangible thing on the basis of any privilege, the work product doctrine, relevancy, undue burden, or any other valid objection. Discovery and investigation are continuing and Smart Vent reserves the right to supplement, modify, or change these disclosures at any time.

Smart Vent’s disclosures are made without waiving the right to object on:

- 1) the grounds of competency, privilege, relevancy, materiality, hearsay, or any other proper ground, to the use of any such information for any purpose, in whole or in part, in any subsequent stage or proceeding in this action, or any other action; and

- 2) any and all grounds, at any time, to any other discovery requests involving or relating to the subject matter of these disclosures.

All of the disclosures set forth below are made subject to the above comments and qualifications.

**DISCLOSURES UNDER FED.R.CIV.P. 26(a)(1)(A)**

**I. Rule 26(a)(1)(A)(i)**

Under Rule 26(a)(1)(A)(i) of the Federal Rules of Civil Procedure and to the extent known by it, Smart Vent hereby discloses: (i) the identity of all individuals likely to have discoverable information that Smart Vent may use, except solely for impeachment, to support its claims or defenses; and (ii) the subject(s) of such information:

**Smart Vent Products, Inc.**

Representatives, employees, or agents of Smart Vent including, but not limited to: Mike Graham and Tom Little. These individuals are executives of Smart Vent and can be contacted through counsel.

It is anticipated that these witnesses may testify regarding certain issues relevant to the allegations in Smart Vent's pleadings, including, but not limited to, the flood vent industry, the regulations applicable to the flood vent industry, the use of Smart Vent's trademark, and damages sustained by Smart Vent.

**Crawl Space Door System, Inc.**

Representatives, employees, or agents of Crawl Space Door System, Inc. including, but not limited to: William G. Sykes, Esq. Mr. Sykes is the President of Crawl Space Door System, Inc. ("Crawl Space Door").

It is anticipated that this witness(es) may testify regarding certain issues relevant to the allegations in Crawl Space Door's pleadings, including, but not limited to Crawl Space Door's flood vents, advertisements, manufacturing, distribution, and representations made by the company concerning its products.

**Other Witnesses**

Any witnesses, both lay and expert, called to testify at trial.

In making this representation, Smart Vent does not concede that any or all of the individuals named by Smart Vent possess discoverable information. Smart Vent reserves the right to supplement this response in accordance with the applicable Federal Rules of Civil Procedure or Local Rules of the United States District Court for the District of New Jersey, or both.

**II. Rule 26(a)(1)(A)(ii)**

Under Rule 26(a)(1)(A)(ii) of the Federal Rules of Civil Procedure, Smart Vent identifies the following documents that are located in Smart Vent's possession, custody, or control that Smart Vent may use, except solely for impeachment, to support its claims or defenses:

Smart Vent has documents, electronically stored information and tangible things which it may use to support its claims and defenses. These documents include materials from FEMA and NFIP; marketing materials made available by Crawl Space Doors; the trademark registration and filings made to the U.S. Patent and Trademark Office on behalf of Smart Vent; documents relating to Crawl Space Doors' marketing of flood vents, including calculations concerning net open area,

“certifications” signed by engineers employed by Crawl Space Doors, flyers, and other advertisements, flood vents sold by Crawl Space Doors, and related documents.

Smart Vent reserves the right to supplement this response in accordance with the applicable Federal Rules of Civil Procedure or Local Rules of the United States District Court for the District of New Jersey, or both.

### **III. Rule 26(a)(1)(A)(iii)**

Smart Vent seeks the lost profits it experienced as the result of defendant’s unfair competition and trademark infringement, the profits realized by the defendant through its unfair competition and trademark infringement, and its counsel fees and costs. Smart Vent’s damages include, but are not limited to, those available to Smart Vent under 15 U.S.C. §1117(a), including enhanced damages.

Smart Vent also seeks an injunction against defendant for the unfair competition and trademark infringement alleged in Plaintiff’s complaint.

Smart Vent respectfully reserves the right to supplement and/or amend this computation of damages claimed upon continuing discovery.

Smart Vent reserves the right to supplement this response and in accordance with the applicable Federal Rules of Civil Procedure or Local Rules of the United States District Court for the District of New Jersey, or both.

### **IV. Rule 26(a)(1)(A)(iv)**

A copy of Smart Vent’s insurance agreement will be provided to Crawl Space under separate cover.

Smart Vent respectfully reserves the right to change or supplement these disclosures as discovery progresses. Smart Vent further reserves the right to object at such later time that any response given hereunder is protected by attorney/client privilege, is attorney work product, or trial preparation material, or the disclosure of such information was inadvertent.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Anthony J. DiMarino", is written over a horizontal line.

Anthony J. DiMarino  
Emmett S. Collazo

**A.J. DiMarino, P.C.**

41 Grove Street  
Haddonfield, NJ 08033

[ajd@dimarinolaw.com](mailto:ajd@dimarinolaw.com)

[collazo@dimarinolaw.com](mailto:collazo@dimarinolaw.com)

Phone: 856-853-0055

FAX: 856-853-2866

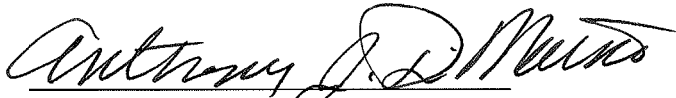
Date: January 30, 2015

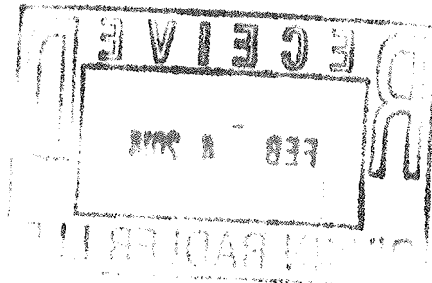
CERTIFICATE OF SERVICE

I hereby certify that on January 30, 2015, Plaintiff's Supplemental Initial Disclosures were served on Defendant's counsel of record, as set forth below, by regular, United States mail.

Michael C. Cannata, Esq.  
Stephen J. Smirti, Esq.  
RIVKIN RADLER, LLP  
23 Main Street, Suite 158  
926 RXR Plaza  
Uniondale, NY 11556  
Counsel for Defendant

Date: January 30, 2015

  
Anthony J. DiMarino, Esquire  
**A.J. DIMARINO, P.C.**  
41 Grove Street  
Haddonfield, NJ 08033  
collazo@dimarinolaw.com  
(856) 853-0055





# **Exhibit “E”**

Michael J. Graham

1 UNITED STATES DISTRICT COURT  
2 FOR THE DISTRICT OF NEW JERSEY

3 -----  
4 SMART VENT PRODUCTS, INC., : Civil Action No.  
5 : 1:13-cv-05691  
6 Plaintiffs, :  
7 vs. :  
8 :  
9 CRAWL SPACE DOOR SYSTEM, INC. :  
10 D/B/A CRAWL SPACE DOOR :  
11 SYSTEMS, INC., :  
12 :  
13 Defendant. :  
14 -----

15 - - -  
16 JANUARY 29, 2016  
17 - - -

18 Transcript of the deposition of MICHAEL  
19 J. GRAHAM, called for Oral Examination in the  
20 above-captioned matter, said deposition taken  
21 by and before MARGARET M. REIHL, A Registered  
22 Professional Reporter, Certified Shorthand  
23 Reporter and Notary Public, at the offices of  
24 WHITE & WILLIAMS LLP, 457 Haddonfield Road,  
25 Suite 400, Liberty View, Cherry Hill, New  
Jersey, commencing at 9:33 a.m., there being  
present:

26 GOLKOW TECHNOLOGIES, INC.  
27 877.370.3377 ph/917.591.5672 fax  
28 deps@golkow.com

1 Space overstates the net area of its vent?

2 MR. DiMARINO: Do you actually have

3 Exhibit D available?

4 MR. ONUFRAK: I don't believe so, no.

5 THE WITNESS: So if I can answer that,  
6 if I can say, just to make sure that I'm clear, in 53 a  
7 third party determined that the total -- so our -- does  
8 this say that our third party determined this?

9 BY MR. ONUFRAK:

10 Q. I believe you're referring to Lori Malitsky's  
11 contention as set forth in her exhibit. Let me ask it  
12 this way: You've determined that Crawl Space Doors  
13 overstates the net open area of its vents, correct?

14 A. Yes.

15 Q. Tell me everything you know about how your  
16 company has done that over the last few years.

17 A. How we have done what?

18 Q. Determined that Crawl Space overstates the net  
19 open area?

20 A. There are two elements that make up the  
21 enclosed area that a vent can cover, and so let me ask  
22 another question, if you don't mind -- am I allowed to  
23 ask questions like this so I can clarify? I just want  
24 to make sure I --

25 Q. Generally, you should not, but just try to

1 answer the best you can.

2 A. All right. So we'll talk about net open area.

3 MR. DiMARINO: Hold on. Make sure you  
4 understand the question that's being asked. If you  
5 need clarification, then ask for clarification.

6 THE WITNESS: So if you could clarify  
7 are we talking about the net open area of the Crawl  
8 Space Door or area of coverage of Crawl Space Door?

9 BY MR. ONUFRAK:

10 Q. We can talk about both.

11 A. Let's start with the net open area. So the net  
12 open area is one component that's used to figure out  
13 what the coverage is of one particular vent, and that's  
14 1 square inch per 1 square foot coverage per vent, and  
15 back in 1999 or in 2000, when I started this AMCA,  
16 method of measuring that net open area was important to  
17 us because we also have a net open area on our vent,  
18 and that's how much -- that's a key piece that's the  
19 open area that water can get through, and so we use  
20 that AMCA standard, which is the standard in the  
21 industry, to measure net open area.

22 And NFA free area is also another term that's  
23 used usually in the ventilation industry. It's also  
24 pointed to in the flood vent industry. When we used  
25 that method to measure the Crawl Space Door, it was not

1     only not off by just a little bit, it was so far off  
2     that we thought we were -- you know, something was  
3     wrong. So we found just by using very simple, not  
4     even -- and just to clarify -- now, I don't have -- as  
5     a tool maker, I am trained to be able to measure things  
6     that are the thickness of your hair, very, very  
7     accurate, within 1,000s of an inch measurement, and I  
8     know how to measure.

9             With a wooden ruler, we could take a wooden  
10    ruler to this and realize that something was way, way  
11    off, and so the first thing was clear was the  
12    measurement of the net free area was incorrect, okay.  
13    So that's one element to figure out how many square  
14    inches of coverage a vent takes.

15            The other is the coefficient of discharge, and  
16    there are references in TBl. There's references in  
17    ASCE 24. There are references that go back to 1850  
18    that talk about the flow of water and why water flows  
19    through a smooth round pipe faster than a square rough  
20    element. And so when we looked at the coefficient to  
21    discharge of an obstructed opening, and an obstructed  
22    opening is very clear, and, again, all those documents  
23    that if there's a louver or a grill or grate in front  
24    of an opening, it's categorized as obstructed, and  
25    unlike a round pipe with nothing in front of it, it

1 gives you .6 coefficient of discharge. It is clear to  
2 a layman that there are obstructions, and so discharge  
3 for that should be a .2 or should be something around a  
4 .2, and in the latest information they're using .8, and  
5 .8 is a coefficient of discharge, which means that .8.  
6 So with a .8 the water flows through this obstructed  
7 opening faster than an open -- clear open pipe, and  
8 it's not even reasonable that it could be.

9 Q. When did you personally or the company in  
10 general first hear of Crawl Space Doors?

11 A. So Crawl Space Doors has always sold  
12 nonengineered openings or air vents from very, very  
13 early on in our business. We have, I would say, 50  
14 nonengineered openings, which are air vents that are  
15 used as flood vents in the industry.

16 Q. Not 50 from Crawl Space Doors, you mean 50 in  
17 total?

18 A. Yes, sir. Maybe more than 50, but 50, about 50  
19 that we know of that are air vents that are used in  
20 different parts of the country as flood vents.

21 Q. Now, you have made it your business to research  
22 and search for these nonengineered openings over many  
23 years; isn't that true?

24 A. Yes.

25 Q. Have you done that personally?

1 Q. That was done for Crawl Space Door vents?

2 A. It was done for our vent. It was done for  
3 Crawl Space Door vents, and any time we find something  
4 that we want to measure, we use that technique because  
5 it's the most accurate.

6 Q. Has that technique been used on all the 50 or  
7 so nonengineered vents that you've found?

8 A. No, because it's stamped on the face of all but  
9 Crawl Space Doors, I think.

10 Q. Are there any other engineers employed by the  
11 company?

12 A. No.

13 Q. You mentioned consulting engineers. Are there  
14 consulting engineers who are employed on a regular  
15 basis by the company?

16 A. No. Well, actually one, Ed Novack was an  
17 engineer that we -- before we brought -- Jim has been  
18 with us for many a year. Ed Novack that did a lot of  
19 our AutoCAD, he wasn't involved in any of this.

20 Q. How many consulting engineers has the company  
21 employed, say, in the last five years?

22 A. I'm thinking maybe eight.

23 Q. Have any of them been employed to look at Crawl  
24 Space Door vents?

25 A. Yes.

1 Q. Who are they?

2 MR. DiMARINO: With the exception of the  
3 individual we discussed, you can answer that question.

4 THE WITNESS: Okay. Bill Coulbourne.

5 BY MR. ONUFRAK:

6 Q. How do you spell that?

7 A. C-o-l-b-o-u-r-n. And so I would say just Bill.

8 Q. How about Rebecca Quinn?

9 A. No.

10 Q. Has the company employed her as a consulting  
11 engineer?

12 A. Yes.

13 Q. On what occasions?

14 A. Back when we first started our business, she  
15 was very knowledgeable in both the NFIP and the  
16 building code requirements, and so in 2002 and '03 --  
17 2001, maybe as far back as then, we would ask for her  
18 assistance to help us understand the rules on  
19 certification process, the building code and the NFIP  
20 requirements.

21 Q. But she was not employed to look at Crawl Space  
22 Doors' vents?

23 A. Correct.

24 Q. What specifically did Mr. Coulbourne do with  
25 regard to Crawl Space Door vents?



1 A. If I remember correctly, and we do a lot of  
2 stuff, I think that we asked him to confirm our  
3 measurements.

4 Q. What time period would he have confirmed those  
5 measurements?

6 A. I'm not sure.

7 Q. Could you give a reasonable estimate?

8 A. I'm going from the documents that I've read,  
9 going back, you know, I'm going to say, I don't know, I  
10 could say 2005, but I'm not sure.

11 Q. Let me hand you what we'll mark for  
12 identification as Smart Vent-5, which is the answers to  
13 Defendant's Second Set of Interrogatories.

14 (Document marked for identification as  
15 Smart Vent Deposition Exhibit No. 5.)

16 BY MR. ONUFRAK:

17 Q. Let me direct your attention to Interrogatory  
18 Number 22, which is on Page 11. It refers there to  
19 something called Smart Vent's Non-Engineered Opening  
20 Guide, Volume 1, dated January 2015.

21 Are you familiar with that document?

22 A. Yes.

23 Q. And it says there, "the vent located at the  
24 bottom of Page 8 was included as an example of a  
25 nonengineered opening found in the field."

# **Exhibit “F”**

**UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NEW JERSEY  
CAMDEN VICINAGE**

SMART VENT PRODUCTS, INC.,	:	
	:	
Plaintiff,	:	CIVIL ACTION NO.:
	:	
v.	:	1:13-cv-05691-JBS-KMW
	:	
CRAWL SPACE DOOR	:	Jury Trial
SYSTEM INC., d/b/a CRAWL	:	
SPACE DOOR SYSTEMS, INC.	:	<b>JOINT</b>
	:	<b>FINAL PRETRIAL ORDER</b>
	:	<b>REVISED 5/3/2019</b>
Defendant.	:	

The following shall constitute the Final Pretrial Order pursuant to Rule 16, Federal Rules of Civil Procedure. This Final Pretrial Order shall govern the conduct of the trial of this case.

Amendments to this Order will be allowed only in exceptional circumstances to prevent manifest injustice. See Fed. R. Civ. P. 16 (e). Counsel are urged to move to amend in a timely fashion any portion of the Order that must be changed or modified between the filing of the Order and the trial date.

**APPEARANCES:**

For Smart Vent Products, Inc.:	Anthony J. DiMarino, III Emmett S. Collazo <b>A.J. DiMarino, P.C.</b> 52 Haddonfield Berlin Road, Suite 1000 Cherry Hill, NJ 08034 Phone: (856) 853-0055
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For Crawl Space Door Systems, Inc.:	Siobhan K. Cole Morgan S. Birch <b>WHITE &amp; WILLIAMS, LLP</b> 1650 Market Street One Liberty Place, Suite 1800 Philadelphia, PA 19103
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**PART I. JURISDICTION AND BRIEF SUMMARY OF THE CASE:**

This Court has jurisdiction over this matter pursuant to 28 U.S.C. § 1331 because the Complaint raises claims arising under the laws of the United States, including 28 U.S.C. § 1338 and 15 U.S.C. §§ 1121 and 1125.

Smart Vent Products, Inc. (“Smart Vent”) and Crawl Space Door Systems, Inc. (“Crawl Space Doors”) sell foundation flood vents. Flood vents are devices that are used in structures to allow flood waters to flow freely in and out of the lower level of a structure so that water pressure does not build up on either side of the walls supporting the structure. If water pressure were permitted to build up on either side of a foundation wall, that pressure could compromise the foundation wall and cause significant structural damage to the property.

**A. Smart Vent’s Claims**

Smart Vent has asserted claims of unfair competition, negligent misrepresentation, and trademark infringement against Crawl Space Doors.

Smart Vent asserts that Crawl Space Doors has, among other items, knowingly overstated the square footage its vents can serve, falsely claimed that its flood vents comply with certain regulations and standards, falsely suggested that its flood vents are covered by utility patents, and infringed Smart Vent’s registered trademark SMART VENT to drive traffic to Crawl Space Doors’ website.

For example, Crawl Space Doors claimed that its flood vents were compliant with Technical Bulletin 1, August 2008 (“TB-1”), a publication produced by FEMA. This Court has already found that Crawl Space Doors’ claims that its flood vents were compliant with TB-1 were “unsubstantiated” and “literally false.”

Because the Court also determined, *inter alia*, that the public's interest would be furthered by "protecting consumers from the deception and confusion caused by CSD's false advertising of its flood vents...", the Court also issued a permanent injunction preventing Crawl Space Doors from claiming that its mass-produced louvered flood vents are TB-1 compliant.

**B. Crawl Space Doors' Answer, Affirmative Defenses and Counterclaim**

Crawl Space Doors answers that this Court already determined that FEMA Technical Bulletin 1 ("TB-1") does not carry the force of law and that Crawl Space Doors need not comply with the guidance set forth in TB-1 in order to market its flood vents as compliant with the National Flood Insurance Program, or FEMA, so long as Crawl Space Doors complies with federal regulations. Moreover, the Court determined that with respect to the certification process it uses for its engineered flood vents, Crawl Space Doors complied with federal regulations, although Crawl Space Doors' process does not comply with TB-1. As a result, this Court dismissed those portions of Smart Vent's unfair competition claims, with prejudice, as they pertain to Crawl Space Doors' statements regarding FEMA and NFIP compliance. With respect to Crawl Space Doors' statements regarding TB-1, the Court issued a permanent injunction preventing Crawl Space Doors from advertising its flood vents as TB-1 compliant, and Crawl Space Doors is abiding by that injunction. With respect to statements Crawl Space Doors made regarding TB-1 in its certifications or advertisements, Crawl Space Doors denies that any of those statements were made in bad faith and further denies that Smart Vent suffered any damages as a result.

As set forth in the Court's March 11, 2019 Order [D.I. 166] the other issues remaining for trial consist of: (1) Smart Vent's unfair competition claims arising from Crawl Space Doors' alleged false or misleading statements regarding the amount of area its flood vents can serve and

the compliance of Crawl Space Doors' vents with industry standards other than the NFIP and FEMA, as well as Crawl Space Doors' alleged false or misleading statements regarding its design patents; (2) Smart Vent's negligent misrepresentation claim concerning the same matters; and (3) Smart Vent's trademark misuse claim.<sup>1</sup>

In response to these claims, Crawl Space Doors denies that it made any false or misleading statements regarding the amount of area its flood vents can serve, the compliance of its vents with other industry standards, or the design patents Crawl Space Doors holds for its flood vents, nor did it make any negligent statements. Crawl Space Doors also denies that it infringed upon Smart Vent's trademark by, at one point, using the words "smart vent" in the coding of its website as a metatag. Crawl Space Doors' also asserted the following affirmative defenses to Smart Vent's remaining claims: no willful infringement; acquiescence; laches; delay; waiver; estoppel; no injury or damages; no likelihood of consumer confusion; no infringement; fair use; and statute of limitations. Crawl Space Doors further reserved the right to assert additional defenses up to and including the time of trial.

Crawl Space Doors asserts counterclaims against Smart Vent for unfair competition based upon false and misleading statements Smart Vent made to the flood vent market that, among other things, Crawl Space Doors' flood vents are not FEMA compliant and that Smart Vent's flood vents are the "only" flood vent products that are certified to meet the requirements as set forth by FEMA and the NFIP.

In response to Smart Vent's claims that any of Crawl Space Doors' counterclaims are barred by the doctrine of laches or applicable statutes of limitations (which Crawl Space Doors

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<sup>1</sup> As well as Crawl Space Doors' counterclaims.

does not concede) Crawl Space Doors is entitled to set-off its counterclaims against the claims asserted by Smart Vent.

**C. Smart Vent's Answer to Crawl Space Doors' Counterclaim**

Smart Vent denies the counterclaims asserted by Crawl Space Doors and disputes Crawl Space Doors' answers and affirmative defenses. Smart Vent has asserted the affirmative defenses of, among other items, laches, estoppel, waiver, unclean hands, statute of limitations, failure to mitigate, lack of irreparable harm, and lack of standing.

**PART II. STIPULATED FACTS:**

1. Smart Vent and Crawl Space Doors are both in the business of manufacturing and selling flood vents.
2. Crawl Space Doors' and Smart Vent's flood vents travel in interstate commerce.
3. Crawl Space Doors does not have an Evaluation Report from the ICC-ES for its engineered or non-engineered flood vents.
4. A material consideration in the purchase and use of flood vents is whether the purchaser will be able to lower their flood insurance premiums.
5. CSD markets and sells its 8" x 16" static, engineered flood vents as servicing an enclosed area of 205 square feet.
6. Crawl Space Doors' flood vents have not been certified as meeting the standards of ASCE 24-14.
7. CSD does not provide documentation with its flood vent indicating the flood vents meet the requirements of ASCE 24-14.
8. Crawl Space Doors contacted FEMA regarding Crawl Space Doors' engineer certifications.
9. Crawl Space Doors does not sell individually designed flood vents.
10. At one-point Crawl Space Doors used the words "smart vent" as a meta-tag in the coding of its website.
11. "SMART VENT" is a trademark owned by Smart Vent, on the United States Patent and Trademark Office's Principle Register, under federal registration number 2,464,134. The mark has been registered since 2001, and was renewed in 2011.

12. A material consideration in the purchase and use of flood vents is the amount of square feet of enclosed space the flood vent can service.

**PART III. PLAINTIFF'S CONTESTED FACTS**

**A. Plaintiff intends to prove the following contested facts with regard to liability:**

1. CSD significantly overstates the net open area of its static engineered and non-engineered flood vents.

2. By significantly overstating the net open area of its flood vents, CSD significantly overstates the amount of enclosed space each vent can serve.

3. By significantly overstating the performance characteristics of its flood vents, including coefficient of discharge, CSD significantly overstates the amount of enclosed space each vent can serve.

4. The consequence of CSD's overstatements of the area and performance characteristics properly serviced by a single flood vent is that consumers are misled and do not know that additional flood vents are needed to service a given enclosed area.

5. CSD has a history of overstating the performance of its flood vents.

6. CSD improperly utilizes certifications from engineers licensed in various states to support its claim that its flood vent products are compliant with the requirements of FEMA and NFIP.

7. The certifications provided by these engineers include statements by the engineers that they did not personally calculate the net open area of the engineered vents themselves.

8. These certifications also include inconsistencies concerning who provided and/or determined the net open area of the flood vents.

9. CSD's position that the coefficient of discharge in its static, fixed-louvered vent of between 0.4 and .85 is unsupportable.

10. As a result of Crawl Space Doors' actions and statements, there is actual deception of the intended audience, namely, the consumers of the flood vents.

11. As a result of Crawl Space Doors' actions and statements, consumers of flood vents are likely to be deceived and/or confused about the performance of the flood vents and the proper number of flood vents necessary for an enclosed space.

12. CSD's marketing statements falsely suggest that its products are protected by utility patents.



13. Since at least 2012, Crawl Space Doors has used the incontestable trademark “SMART VENT” in connection with its Internet marketing, to capture Smart Vent’s good will and reputation, to drive more traffic to its website, to suggest endorsement by Smart Vent, and/or to falsely associate itself with quality products produced by Smart Vent.

14. Crawl Space Doors intentionally uses the registered trademark “SMART VENT” as a “tag” and a “meta-tag” in the coding of its website in order to (i) achieve a higher ranking and profile on Internet search engines, and (ii) to profit from the goodwill and high quality reputation of its competitor, Smart Vent, and so include the registered trademark on multiple websites, at least the following:

<title>Crawl Space Doors - Foundation Vents  
Installation</title>

<meta name=“keywords” content=“crawl  
space doors, vent covers, air vents, door fan,  
shutter fans, flood vents, crawlspace door,  
smart vent, home humidity, flood and air  
products, air fan installation, foundation  
doors, vent foundation, exhaust window fan”>

15. Crawl Space Doors’ use and infringement of “SMART VENT” injures Smart Vent’s reputation, including by the capture of Smart Vent’s goodwill and Smart Vent’s reputational investments made in connection with the mark.

16. Crawl Space Doors’ aforementioned statements are material in that the statements influence the purchasing decisions of consumers and design and construction professionals.

17. Crawl Space Doors’ statements about its flood vents, including the enclosed area serviced by each flood vent, were made intentionally, knowingly, or with reckless disregard in that the statements would influence the purchasing decisions of consumers and construction professionals.

18. The use of the incontestable registered trademark “SMART VENT” in connection with marketing of its products, is false and misleading.

19. Crawl Space Doors’ distribution, marketing, promotion, offering for sale, and sale of goods in connection with the use of the incontestable trademark “SMART VENT”, a mark owned by Smart Vent, is likely to cause confusion, mistake, or deception as to the source, affiliation, sponsorship, or authenticity of Crawl Space Doors’ goods.

20. As a result of Crawl Space Doors’ unauthorized use of trademarks that are identical to and/or confusingly similar to Smart Vent’s mark, the public is likely to believe that Crawl Space Doors’ goods have been manufactured, approved by, or are affiliated with Crawl Space Doors. Consequently, Smart Vent’s ability to gain revenue through the sale of merchandise bearing its mark is limited.

21. Crawl Space Doors' unauthorized use of the mark falsely represents Crawl Space Doors' website and products as emanating from, or being authorized by Smart Vent, and places beyond Smart Vent's control the quality of products bearing the "SMART VENT" trademark, and the overall message associated with the products bearing the "SMART VENT" trademark.

22. CSD's acts of unfair competition, including continuing to advertise and market its products as compliant with ASCE 24-05, instead of ASCE 24-14, to overstate the performance of its flood vents, to claim that its flood vents properly allow for the reduction of flood insurance premiums, are voluntary, knowing, willful and/or intentional.

23. CSD knows that it does not provide the documentation required under Chapter 7 of the NFIP Insurance manual yet still advertises that its flood vents will allow the purchaser to reduce its flood insurance premiums.

24. CSD knows that the way it measures the net open area of its flood vents is not acceptable to FEMA or the NFIP, knows that no competitors in the flood vent industry measure net open area the same way as CSD, and cannot identify any standards which allow CSD to measure the net open area of its flood vents in the manner in which it does.

25. The standard recognized as essential to the protection of others from unreasonable risk of harm with respect to performance characteristics of engineered and non-engineered flood vents is the ASCE standard.

26. CSD's consultant Dr. Reichard does not stand behind any of Crawl Space Doors' certifications.

27. CSD's statement, "Certification of Engineered Flood Openings: In Accordance with NFIP, FEMA TB-1-08 and ASCE/SEI 24-05," which was placed as the header on over a dozen pre-signed documents that were publicly available on Defendant's website, are unsubstantiated and *per se* false as to TB-1 compliance.

28. CSD's statements regarding the TB-1 compliance of its flood vents were material in that these statements were likely to influence purchasing decisions.

29. Statements as to performance criteria of flood vents, including area serviced by a flood vent, is material in that it is likely to influence purchasing decisions.

30. There is no difference in the design of the air vents sold by Crawl Space Doors and the engineered and non-engineered flood vents sold by Crawl Space Doors.

31. A material consideration in the purchase and use of flood vents is whether the flood vent meets the requirements necessary to lower the flood insurance premium for the property where it is installed.

32. CSD has been aware that Smart Vent has used the phrase "FEMA Accepted" in connection with marketing of flood vents since before July 11, 2005.

33. CSD has never tested any of its engineered or non-engineered flood vents for performance.

34. Crawl Space Doors sold flood vents containing what it claimed to be a biodegradable cardboard insert.

35. CSD does not sell flood vents that are specifically designed for installation in an individual structure.

36. CSD does not sell a flood vent that meets the requirements of ASCE 24-05 or ASCE 24-14.

**B. Plaintiff intends to prove the following contested facts with regard to damages:**

1. Smart Vent has been damaged by CSD's acts of unfair competition, trademark infringement, and negligent misrepresentations identified above.

2. CSD has improperly profited from its acts of unfair competition, described above.

3. Smart Vent's damages include the cost and expense of re-educating the marketplace, including but not limited to consumers, builders, and architects, about requirements for obtaining flood insurance through the use of flood vents.

4. CSD has profited from its improper behavior in an amount to be established at trial by Smart Vent's damages expert.

5. Smart Vent has lost sales to CSD as a result of CSD's unfair competition.

6. Smart Vent has lost profits due to CSD's unfair competition in an amount to be established at trial by Smart Vent's damage expert.

7. CSD's acts of unfair competition justify the imposition of an injunction.

8. CSD should be required to issue corrective advertising to past customers and to the marketplace for flood vents.

9. Plaintiff's damages include those set forth by Plaintiff's expert, Eisner Amper.

10. Plaintiff's damages include actual damages, incidental damages, and consequential damages as permitted by law, including punitive and treble damages, pursuant to 15 U.S.C. § 1117, N.J.S.A. 56:4-2, or the common law;

11. Smart Vent should receive an award of all of Defendant's profits or gains resulting from Defendant's willful acts of unfair competition as provided by 15 U.S.C. § 1117, N.J.S.A. § 56:4-2, or the common law.

12. Smart Vent should receive an award of interest, attorneys' fees, costs and disbursements due to the exceptional nature of this case as provided by 15 U.S.C. § 1117, by N.J.S.A. § 56:4-2, or the common law.

**PART IV. DEFENDANT'S CONTESTED FACTS**

1. Smart Vent made false and misleading statements that Crawl Space Doors' flood vents are not FEMA compliant and that Smart Vent's flood vents are the only flood vents that comply with FEMA and the NFIP.

2. Smart Vent produced a false video to harm Crawl Space Doors.

3. Smart Vent routinely misleads the public about Crawl Space Doors.

4. Smart Vent has no evidence Crawl Space Doors acted in bad faith when publicizing its design patents in the marketplace.

5. Crawl Space Doors owns several design patents.

6. Crawl Space Doors' products are the embodiments of its design patents.

7. Internet searches lead to numerous results if a consumer searches for "smart vent."

8. Meta-tags only generate search results, they do not automatically direct a user to a particular website.

9. Smart Vent uses "crawl space" and "Crawl Space Doors" as meta-tags.

10. Although the Court ultimately held that Crawl Space Doors' certification process was not TB-1 Compliant, Crawl Space Doors always believed it was in compliance with TB-1 and hired many engineers in support of its good-faith efforts to comply with TB-1's guidance.

11. Smart Vent enjoys approximately 90% of the flood vent market.

12. Smart Vent has been harmed by numerous other competitors who infringed on Smart Vent's patents or illegally competed against Smart Vent.

13. Crawl Space was damaged by Smart Vent's false and misleading statements regarding Crawl Space Doors and its flood vents.

**PART V. WITNESSES AND SUMMARY OF TESTIMONY:**

**A. Plaintiff's Witnesses and Summary of their Testimony.**

Plaintiff intends to call the following witnesses with regard to liability but reserves the right not to call any of these witnesses or call them only in rebuttal and anticipates that they will testify as follows:

1. Michael Graham (Pitman, New Jersey)

Michael Graham is the President of Smart Vent Products, Inc. Michael Graham will testify to, among other items, the following: the corporate history and development of Smart Vent Products, Inc, Michael Graham's efforts to develop, market and sell flood vents, the testing criteria used for flood vents, Smart Vent's efforts to attain regulatory approval for its products, including, but not limited to, ICC-ES Evaluation Reports and other approvals, the current and historical nature, geographic scope and economic size of the market for flood vent products, Smart Vent's expertise in research and development and marketing efforts, Smart Vent's abilities from a manufacturing, distribution, marketing and sales perspective, competitors in the flood vent industry including the market shares of Smart Vent and its competitors, regulations applicable to the flood vent industry, insurance issues in the flood vent industry, FEMA, NFIP, ICC-ES, Smart Vent's experiences with its training and educational programs including the need to correct the improper information resulting from CSD's marketing and advertising activities, sales of flood vents and flood vent products by Smart Vent, costs and expenses incurred in connection with those sales, the development of the Smart Vent brand, including its trademark, Smart Vent's patent portfolio, Crawl Space's activities in the market place, and damages sustained by Smart Vent as a result of the actions of Crawl Space.

2. Tom Little (Pitman, New Jersey)

Tom Little will testify to, among other items, the following: the corporate history and development of Smart Vent Products, Inc, Smart Vent's efforts to develop, market and sell flood vents, the testing criteria used for flood vents, Smart Vent's efforts to attain regulatory approval for its products, including, but not limited to, ICC-ES Evaluation Reports and other approvals, the current and historical nature, geographic scope and economic size of the market for flood vent products, Smart Vent's expertise in research and development and marketing efforts, Smart Vent's abilities from a manufacturing, distribution, marketing and sales perspective, competitors in the flood vent industry including the market shares of Smart Vent and its competitors, regulations applicable to the flood vent industry, insurance issues in the flood vent industry, FEMA, NFIP, ICC-ES, Smart Vent's experiences with its training and educational programs including the need to correct the improper information resulting from CSD's marketing and advertising activities, sales of flood vents and flood vent products by Smart Vent, costs and expenses incurred in connection with those sales, the development of the Smart Vent brand, including its trademark, Smart Vent's patent portfolio, Crawl Space's activities in the market place, and damages sustained by Smart Vent as a result of the actions of Crawl Space.

Mr. Little will also testify concerning the contents of his written Statement of Opinion dated June 30, 2015.

3. Kurt Luecke (Joppa, Maryland)

Mr. Luecke is a representative of Smart Vent, he has information concerning CSD, including CSD websites, marketing, sales efforts, diversion of customers, and general activity in the marketplace.

4. Brian Shaw (Pitman, New Jersey)

Mr. Shaw is an employee of Smart Vent. Mr. Shaw will testify to, among other items: Smart Vent's videos, the terms which Smart Vent did, and did not, associate with its videos, the documents produced by CSD on April 25, 2019 concerning the alleged meta tags associated with the Smart Vent videos, as well as the documents produced by Smart Vent in response (SV 37372 – SV 37393).

5. Sandra Doner (Haddonfield, New Jersey)

Paralegal at A. J. DiMarino, P.C. Ms. Doner's testimony will be limited to authenticating the documents printed from The Digerati Group's store on amazon.com, as well as the documents obtained from [www.wearedigerati.com](http://www.wearedigerati.com) and [www.amazon.com](http://www.amazon.com).

6. William Sykes (Virginia Beach, Virginia)

William Sykes is the President of Crawl Space Doors. Mr. Sykes will testify about the formation of Crawl Space, the products sold by Crawl Space, the development of the engineered and nonengineered vents sold by Crawl Space, measurements and performance of CSD's flood vents, Crawl Space's efforts to obtain certifications related to its flood vent products, the marketing and advertising of flood vents and flood vent products by CSD, the sales and profits earned by CSD from the sales of flood vents, including associated products in flood vents that are engineered and non-engineered.

7. Chris Qualtieri (Virginia Beach, Virginia)

Mr. Qualtieri is an employee of Crawl Space Doors and a certified flood plain manager. Mr. Qualtieri will testify to, among other items: the issues he testified about at this deposition, Crawl Space Doors' efforts to market, and sell flood vents; sales of flood vents by Crawl Space Doors; Crawl Space Doors' internal communications and its interaction and communication with the marketplace, including customers and officials.

8. Timothy Hayden (Anderson, South Carolina)

Tim Hayden, President of Sergeant Metal Fabricators Mr. Hayden will testify about Sergeant Metal Fabricators, its relationship with Smart Vent, its manufacturing practices



and procedures, as well as the scale of its operation and its capacity to manufacture additional flood vents.

9. Steven A. Geci (Pensacola, Florida)

Mr. Geci will testify by deposition about his interactions with Crawl Space, including but not limited to services he has provided to Crawl Space, the document(s) prepared for Crawl Space, the analysis conducted by Mr. Geci concerning Crawl Space products, the documents and information provided by Crawl Space, and his review and certification of the Crawl Space products.

10. Richard Broad, III, PE (Windsor, Virginia)

Mr. Broad will testify by deposition about his interactions with Crawl Space, including but not limited to services he has provided to Crawl Space, the document(s) prepared for Crawl Space, the analysis conducted by Mr. Broad concerning Crawl Space products, the documents and information provided by Crawl Space, and his review and certification of the Crawl Space products.

11. Michael A. Cenac, PE (Kenner, Louisiana)

Mr. Cenac will testify by deposition about his interactions with Crawl Space, including but not limited to services he has provided to Crawl Space, the document(s) prepared for Crawl Space, the analysis conducted by Mr. Cenac concerning Crawl Space products, the documents and information provided by Crawl Space, and his review and certification of the Crawl Space products.

12. Herminio Cruz, PE (Metairie, Louisiana)

Mr. Cruz will testify by deposition about his interactions with Crawl Space, including but not limited to services he has provided to Crawl Space, the document(s) prepared for Crawl Space, the analysis conducted by Mr. Cruz concerning Crawl Space products, the documents and information provided by Crawl Space, and his review and certification of the Crawl Space products.

13. David Fitzpatrick, PE (Pensacola, Florida)

Mr. Fitzpatrick will testify by deposition about his interactions with Crawl Space, including but not limited to services he has provided to Crawl Space, the document(s) prepared for Crawl Space, the analysis conducted by Mr. Fitzpatrick concerning Crawl Space products, the documents and information provided by Crawl Space, and his review and certification of the Crawl Space products.

14. Charles D. Griffin (Virginia Beach, Virginia)

Mr. Griffin will testify by deposition about his interactions with Crawl Space, including but not limited to services he has provided to Crawl Space, the document(s) prepared for Crawl Space, the analysis conducted by Mr. Griffin concerning Crawl Space products, the

documents and information provided by Crawl Space, and his review and certification of the Crawl Space products.

15. Delmer Hamilton (Larkspur, Colorado)

Mr. Hamilton will testify by deposition about his interactions with Crawl Space, including but not limited to services he has provided to Crawl Space, the document(s) prepared for Crawl Space, the analysis conducted by Mr. Hamilton concerning Crawl Space products, the documents and information provided by Crawl Space, and his review and certification of the Crawl Space products.

16. Christopher N. Loney (Virginia Beach, Virginia)

Mr. Loney will testify by deposition about his interactions with Crawl Space, including but not limited to services he has provided to Crawl Space, the document(s) prepared for Crawl Space, the analysis conducted by Mr. Loney concerning Crawl Space products, the documents and information provided by Crawl Space, and his review and certification of the Crawl Space products.

17. Tod O'Connell (Hauppauge, New York)

Mr. O'Connell will testify by deposition about his interactions with Crawl Space, including but not limited to services he has provided to Crawl Space, the document(s) prepared for Crawl Space, the analysis conducted by Mr. O'Connell concerning Crawl Space products, the documents and information provided by Crawl Space, and his review and certification of the Crawl Space products.

18. Harry Ranney (Franktown, Colorado)

Mr. Ranney will testify by deposition about his interactions with Crawl Space, including but not limited to services he has provided to Crawl Space, the document(s) prepared for Crawl Space, the analysis conducted by Mr. Ranney concerning Crawl Space products, the documents and information provided by Crawl Space, and his review and certification of the Crawl Space products.

19. William S. Swiderski, PE (Somers Point, New Jersey)

Mr. Swiderski will testify by deposition about his interactions with Crawl Space, including but not limited to services he has provided to Crawl Space, the document(s) prepared for Crawl Space, the analysis conducted by Mr. Swiderski concerning Crawl Space products, the documents and information provided by Crawl Space, and his review and certification of the Crawl Space products.

20. Lori Malitski (Pelham, New Hampshire)

Ms. Malitski will testify by deposition about her interactions with CSD, her independent analysis of CSD products, deception and misrepresentation of measurements and



performance characteristics to the relevant consumers, her efforts to comply with ICC-ES and ASCE requirements, and risks of using CSD flood vents.

21. Georg Reichard, Ph.D. (Blacksburg, Virginia)

Dr. Reichard will testify by deposition about his interactions with CSD, his analysis of CSD products, performance characteristics of CSD products, relevant standards applicable to flood vents, and other discussions with CSD, consistent with his deposition testimony and exhibits.

Plaintiff intends to call the following witnesses with regard to damages but reserves the right not to call any of these witnesses or call them only in rebuttal and anticipates they will testify as follows:

1. Mike Graham (Pitman, New Jersey)

Michael Graham may testify about Smart Vent's finances, including its revenue and expenses since he was first associated with the company. He will also testify about the damages sustained by Smart Vent as a result of the actions of Crawl Space including but not limited to lost sales, revenue, profits and increased expenses to correct the improper statements and actions of CSD in the marketplace.

2. Tom Little (Pitman, New Jersey)

Mr. Little will also testify about the damages sustained by Smart Vent, the scope of the flood vent market, market share of the competitors, damages from the efforts to correct the improper statements and actions of CSD in the marketplace, and other topics set forth in his written Opinion Statements of June 30, 2015.

Smart Vent reserves the right to offer testimony of any of the witnesses listed by Crawl Space Doors.

**B. Defendant's Objections to Plaintiff's Witnesses:**

Crawl Space Doors objects to all plaintiff's witnesses who intend to testify about claims already dismissed or adjudicated by the Court.

Crawl Space Doors' specific objections to Plaintiff's Witnesses are as follows:

1. Tom Little

Crawl Space Doors objects to Mr. Little offering expert testimony or opinions regarding regulations applicable to the flood vent industry, insurance issues in the flood vent industry, FEMA, the NFIP, ICC-ES, and/or the need to correct allegedly improper information resulting from CSD's marketing and advertising activities

2. Kurt Luecke

Crawl Space Doors objects to all of Mr. Luecke's testimony since it pertains to claims not being litigated. Judging from documents submitted by Smart Vent when disclosing Mr. Luecke's testimony, it appears all his testimony pertains to activity that took place in 2017 or 2018.

3. Sandra Doner

Crawl Space Doors objects to Ms. Doner's testimony since it pertains to claims not being litigated. The controversy surrounding the Digerati Group did not arise until 2017 or 2018. If this issue is to be litigated, it must be submitted to the Court and not the jury and Crawl Space Doors likely would stipulate to the admission of the documents Ms. Doner would authenticate if Crawl Space Doors receives similar courtesies from Smart Vent.

4. Timothy Hayden

Crawl Space Doors objects to all of Mr. Hayden's testimony since it does not pertain to claims being litigated and would likely be confusing and overly prejudicial to the jury. The quality and manufacture of Smart Vent's products are not relevant to any of the issues to be decided in this case.

5. Steven A. Geci

Crawl Space Doors objects to those portions of Mr. Geci's testimony that pertain to claims already adjudicated by the Court.

6. Richard Broad, III, PE

Crawl Space Doors objects to those portions of Mr. Broad's testimony that pertain to claims already adjudicated by the Court.

7. Michael A. Cenac, PE

Crawl Space Doors objects to those portions of Mr. Cenac's testimony that pertain to claims already adjudicated by the Court.

8. Herminio Cruz, PE

Crawl Space Doors objects to those portions of Mr. Cruz's testimony that pertain to claims already adjudicated by the Court.

9. David Fitzpatrick, PE

Crawl Space Doors objects to those portions of Mr. Fitzpatrick's testimony that pertain to claims already adjudicated by the Court.

10. Charles D. Griffin

Crawl Space Doors objects to those portions of Mr. Griffin's testimony that pertain to claims already adjudicated by the Court.

11. Delmer Hamilton

Crawl Space Doors objects to those portions of Mr. Hamilton's testimony that pertain to claims already adjudicated by the Court.

12. Christopher N. Loney

Crawl Space Doors objects to those portions of Mr. Loney's testimony that pertain to claims already adjudicated by the Court.

13. Tod O'Connell

Crawl Space Doors objects to those portions of Mr. O'Connell's testimony that pertain to claims already adjudicated by the Court.

14. Harry Ranney

Crawl Space Doors objects to those portions of Mr. Ranney's testimony that pertain to claims already adjudicated by the Court.

15. William S. Swiderski, PE

Crawl Space Doors objects to those portions of Mr. Swiderski's testimony that pertain to claims already adjudicated by the Court.

16. Lori Malitski

Crawl Space Doors objects to Ms. Malitski's testimony to the extent it pertains to claims already adjudicated by the Court. Crawl Space Doors also objects to Ms. Malitski offering expert testimony or opinions regarding Crawl Space Doors' products, or any alleged risks of using Crawl Space Doors' flood vents. Crawl Space Doors further objects to Ms. Malitski's testimony regarding her company's efforts to comply with the ICC-ES or ASCE guidelines because these matters are not relevant to any claims in this litigation.

17. Dr. Georg Reichard

Crawl Space Doors objects to those portions of Dr. Reichard's testimony that pertain to claims already adjudicated by the Court.

18. Chris Qualtieri

Crawl Space Doors objects to Smart Vent's identification of Mr. Qualtieri as a witness for the plaintiff. Crawl Space Doors does not intend to present Mr. Qualtieri as a witness at trial and Mr. Qualtieri is beyond the Court's subpoena power.

**C. Defendant's Witnesses and Summary of their Testimony:**

Defendant intends to call the following witnesses with regard to liability and anticipates they will testify as follows;

1. William Sykes (Virginia Beach, Virginia)

William Sykes is the founder and President of Crawl Space Door System, Inc., d/b/a Crawl Space Door Systems Inc. ("Crawl Space Doors"). Mr. Sykes will testify to, among other items: the creation of Crawl Space Doors and the company's efforts to develop, market, and sell flood vents including the company's engagement of registered professional engineers to perform calculations and issue certifications in order to comply with NFIP regulations; sales of flood vents by Crawl Space Doors as well as the costs attendant to those sales, Crawl Space Doors' publication of its design patents in the marketplace; Crawl Space Doors' use of website meta-tags; Smart Vent's efforts to malign Crawl Space Doors in the marketplace, and damages Crawl Space Doors sustained as a result of Smart Vent's actions.

2. Georg Reichard, Ph.D. (Blacksburg, Virginia)

Dr. Reichard is an Associate Professor at Virginia Tech University. If necessary to show Crawl Space Doors' good faith attempt to comply with TB-1, Dr. Reichard will testify about his analysis of Crawl Space Doors' flood vents, standards and regulations applicable to flood vents, and Dr. Reichard's communications with Crawl Space Doors.

3. Ryan Penny (Philadelphia, Pennsylvania)

Litigation Specialist at White and Williams LLP. Mr. Penny's testimony will be limited to authenticating publicly available documents and videos obtained from the internet..

4. Tom Little (Pitman, New Jersey)

Mr. Little is the Vice President of Smart Vent and will testify regarding Smart Vent's statements to the public that Crawl Space Doors' flood vents are not FEMA compliant or NFIP compliant and that FEMA is investigating Crawl Space Doors. Mr. Little will also testify by cross examination on all issues identified by Smart Vent.

5. Michael Graham (Pitman, New Jersey)

Mr. Graham is the President of Smart Vent and will testify regarding Smart Vent's statements to the public that Crawl Space Doors' flood vents are not FEMA compliant or NFIP compliant and that FEMA is investigating Crawl Space Doors. Mr. Graham will also testify by cross examination on all issues identified by Smart Vent.

Defendant intends to call the following witnesses with regard to damages and anticipates they will testify as follows:

1. William Sykes (Virginia Beach, Virginia)

Mr. Sykes will testify about Crawl Space Doors' sales and finances including its revenue and expenses. Mr. Sykes will also testify about Crawl Space Doors share of the flood vent market and damages sustained by Crawl Space Doors as a result of Smart Vent's actions including but not limited to lost sales, revenue, profits and increased expenses to correct the improper statements and actions of Smart Vent in the marketplace.

2. Tom Little (Pitman, New Jersey)

On cross examination.

3. Michael Graham (Pitman, New Jersey)

On cross examination.

**D. Plaintiff's Objections to Defendant's Witnesses**

*None*

**PART VI. EXPERT WITNESSES:**

**A. Plaintiff's expert witnesses are:**

1. John Miller (Curriculum vitae attached as Exhibit A.)
2. Dr. Richard Crago (Curriculum vitae attached as Exhibit B.)
3. Dana Trexler (Curriculum vitae attached as Exhibit C.)
4. Eli Seggev (Curriculum vitae attached as Exhibit D.)

**B. Defendant's objection to the qualifications of Plaintiff's expert witnesses are:**

1. John Miller (Curriculum vitae attached as Exhibit A.)

Objection: No objection to qualifications, but Crawl Space Doors objects to, among other items, Mr. Miller's methodology and conclusions.

2. Dr. Richard Crago (Curriculum vitae attached as Exhibit B.)

Objection: No objection to qualifications, but Crawl Space Doors objects to, among other items, Dr. Crago's methodology and conclusions.

3. Dana Trexler (Curriculum vitae attached as Exhibit C.)

Objection. No objection to qualifications, but Crawl Space Doors objects to, among other items, Ms. Trexler's legal conclusions.

4. Eli Seggev (Curriculum vitae attached as Exhibit D.)

Objection: No objection to qualifications, but Crawl Space Doors objects to, among other items Mr. Seggev's methodology and conclusions.

**C. Defendant's expert witnesses are:**

1. James Rice – CV attached as Exhibit "E".
2. Robert Wallace – CV attached as Exhibit "F".

Both witnesses timely produced reports and were deposed.

**D. Plaintiff's objections to the qualifications of Defendant's expert witnesses**

**are:**

1. James Rice – No objection to qualifications, but Smart Vent objects to, among other items, Dr. Rice's methodology and conclusions.

2. Robert Wallace - No objection to qualifications, but Smart Vent objects to, among other items, Mr. Wallace's methodology and conclusions.

**PART VII. EXHIBITS**

**A. Plaintiff's Exhibits**

1. Plaintiff intends to introduce the following exhibits into evidence. Plaintiff reserves the right not to introduce any of these exhibits, to use them in whole or in part, or to use them only in rebuttal or on cross examination. Plaintiff reserves the right to introduce defendant's exhibits into evidence, in whole or in part, or to not introduce any of Defendant's exhibits, to use them in whole or in part, or to use them only in rebuttal or on cross-examination. See Plaintiff's Exhibit List, attached as Exhibit G. Plaintiff may also use demonstrative exhibits at trial.

See Defendant's objections attached hereto as Exhibit "H."

**B. Defendant's Exhibits**

Defendant intends to introduce the following exhibits into evidence. See Exhibit "I."

Defendant reserves the right not to introduce any of these exhibits, to use them in whole or in part, or to use them only in rebuttal or on cross examination. Defendant reserves the right to introduce Plaintiff's exhibits into evidence, in whole or in part, or to not introduce any of Plaintiff's exhibits, to use them in whole or in part, or to use them only in rebuttal or on cross-examination. Defendant may also use demonstrative exhibits at trial.

See Plaintiff's objections attached hereto as Exhibit "J."

**PART VIII. LAW**

**A. Plaintiff's statement of the legal issues in this case:**

1. Whether CSD has made, and continues to make, false or misleading statements which misrepresent the certification processes of its engineered and non-engineered static flood vents, including but not limited to marketing flood vents as certified in accordance with FEMA Technical Bulletin 1 (2008), as certified by individual engineers for use in specific homes, as complying with engineering standards that do not apply in respective states and localities, and as complying with National Flood Insurance Program requirements for achieving



a reduction in home insurance, in violation of Section 43(a) of the Lanham Act, 15 U.S.C. § 1125(a)(1)(B).

2. Whether CSD has made, and continues to make, false or misleading statements which misrepresent the performance of engineered and non-engineered static flood vents, including the amount of area that its flood vents will service, in violation of Section 43(a) of the Lanham Act, 15 U.S.C. § 1125(a)(1)(B).

3. Whether CSD willfully made false or misleading statements which misrepresent the performance of engineered and non-engineered static flood vents, including the amount of area that these flood vents will service.

4. Whether CSD made negligent misrepresentations, actionable under New Jersey common law, which misrepresent the performance of engineered and non-engineered static flood vents, including the amount of area that its flood vents will service.

5. Whether Smart Vent is entitled to the entry of a permanent injunction, under Section 34(a) of the Lanham Act, 15 U.S.C. § 1116 and/or or New Jersey common law, that (a) enjoins CSD and its affiliates, subsidiaries, officers, directors, employees, agents, representatives, licensees, successors, and assigns from making statements which misrepresent the performance of engineered and non-engineered static flood vents, including the amount of area that its flood vents will service, and (b) requires CSD and its affiliates, subsidiaries, officers, directors, employees, agents, representatives, licensees, successors, and assigns to implement the following corrective measures:

- Corrective advertising notices directly to all past customers;
- Corrective advertising that explains the error in performance marketing materials and certificates;
- Product recalls; and
- Disclosure of all customer lists to Smart Vent, to include all prior customers who purchased or received an engineered or non-engineered static flood vent from Defendant.

6. Whether Smart Vent is entitled to recover its damages and/or CSD's profits and the costs of this action with respect to CSD's false or misleading statements which misrepresent the amount of area that its flood vents will service under Section 35(a) of the Lanham Act, 15 U.S.C. § 1117(a).

7. Whether Smart Vent is entitled to recover damages under New Jersey common law as the result of any negligent misrepresentation by CSD with respect to the amount of area that its flood vents will service.

8. Whether CSD has made, and continues to make, false or misleading misrepresentations through its use of Smart Vent's registered trademark "SMART VENT" or Smart Vent's name in its distribution, marketing, promotion, offering for sale, and sale of CSD's goods in violation of Section 43(a) of the Lanham Act, 15 U.S.C. § 1125(a)(1)(A) or (B).

9. Whether CSD's prior and current distribution, marketing, promotion, offering for sale, and sale of its goods in connection with the use of Smart Vent's registered trademark "SMART VENT" violate N.J.S.A. § 56:4-1.

10. Whether CSD's prior and current distribution, marketing, promotion, offering for sale, and sale of its goods in connection with the use of Smart Vent's registered trademark "SMART VENT" violate New Jersey's common law which prohibits acts of unfair competition.

11. Whether CSD made negligent misrepresentations, actionable under New Jersey common law, with respect to its prior and current use of Smart Vent's registered trademark "SMART VENT" in connection with its distribution, marketing, promotion, offering for sale, and sale of CSD's goods.

12. Whether CSD's prior and current distribution, marketing, promotion, offering for sale, and sale of its goods in connection with the use of Smart Vent's registered trademark "SMART VENT" constitute acts of trademark infringement in violation of Section 32(1) of the Lanham Act, 15 U.S.C. § 1114(1).

13. Whether the "SMART VENT" trademark is an incontestable registered trademark.

14. Whether the "SMART VENT" registered trademark is valid, enforceable, and not subject to cancellation.

15. Whether CSD willfully infringed the "SMART VENT" registered trademark.

16. Whether CSD's use of the "SMART VENT" registered trademark constituted fair use of the mark.

17. Whether Smart Vent is entitled to the entry of a permanent injunction, under Section 34(a) of the Lanham Act, 15 U.S.C. § 1116, and/or N.J.S.A. § 56:4-2, and/or New Jersey common law, that (a) enjoins CSD and its affiliates, subsidiaries, officers, directors, employees, agents, representatives, licensees, successors, and assigns from distributing, marketing, promotion, offering for sale, and sale of its goods in connection with the use of Smart Vent's registered trademark "SMART VENT," and (b) requires CSD and its affiliates, subsidiaries, officers, directors, employees, agents, representatives, licensees, successors, and assigns to implement the following corrective measures:

- Corrective advertising that the "SMART VENT" mark is a trademark owned by Smart Vent Products, Inc., and that Smart Vent Products, Inc. does not endorse, sponsor, or have any commercial relationship with CSD.

18. Whether Smart Vent is entitled to recover damages and CSD's profits with respect to CSD's wrongful use of Smart Vent's registered trademark "SMART VENT" in its distribution, marketing, promotion, offering for sale, and sale of CSD's goods under Section

35(a) of the Lanham Act, 15 U.S.C. § 1117(a), and/or N.J.S.A. § 56:4-2, and/or New Jersey common law.

19. Whether Smart Vent is entitled to recover damages under New Jersey common law as the result of any negligent misrepresentation by CSD with respect to Smart Vent's registered trademark "SMART VENT."

20. Whether CSD has made, and continues to make false or misleading statements, in bad faith, suggesting that it has utility patents when it only owns design patents in violation of Section 43(a) of the Lanham Act, 15 U.S.C. § 1125(a)(1)(B).

21. Whether CSD made negligent misrepresentations, actionable under New Jersey common law, which misrepresent that it has utility patents when it only owns design patents.

22. Whether Smart Vent is entitled to the entry of a permanent injunction, under Section 34(a) of the Lanham Act, 15 U.S.C. § 1116, and/or New Jersey common law, that (a) enjoins CSD and its affiliates, subsidiaries, officers, directors, employees, agents, representatives, licensees, successors, and assigns from making statements suggesting that it has utility patents when it only owns design patents, and (b) requires CSD and its affiliates, subsidiaries, officers, directors, employees, agents, representatives, licensees, successors, and assigns to implement the following corrective measures:

- Corrective advertising admitting that CSD misrepresented that it has utility patents when it only owns design patents.

23. Whether Smart Vent is entitled to recover damages and CSD's profits with respect to CSD's false or misleading statements suggesting that it has utility patents when it only owns design patents under Section 35(a) of the Lanham Act, 15 U.S.C. § 1117(a).

24. Whether Smart Vent is entitled to recover damages under New Jersey common law as the result of any negligent misrepresentation by CSD with respect to its statements suggesting that it has utility patents when it only owns design patents.

25. Whether Smart Vent is entitled to recover enhanced damages in this action as the result of CSD's Lanham Act violations (i.e., trademark infringement and false advertising) under 15 U.S.C. § 1117(a), which permits damages to be trebled.

26. Whether Smart Vent is entitled to recover the costs it incurred in this action as the result of CSD's Lanham Act violations (i.e., trademark infringement and false advertising) under Section 35(a) of the Lanham Act, 15 U.S.C. § 1117(a).

27. Whether there is any basis for Smart Vent to recover its attorneys' fees, under Section 35(a) of the Lanham Act, 15 U.S.C. § 1117(a), on the grounds that this action is an exceptional case.

28. Whether Smart Vent is entitled to receive enhanced damages in this action as a result of CSD's violations of N.J.S.A. § 56:4-1 (i.e., false and misleading representations

through its use of Smart Vent's registered trademark "SMART VENT" in its distribution, marketing, promotion, offering for sale, and sale of CSD's goods) under N.J.S.A. § 56:4-2, which permits damages to be trebled.

29. Whether Smart Vent is entitled to recover punitive damages under New Jersey's Punitive Damages Act, N.J.S.A. § 2A:15-5.9, as the result of (a) any negligent misrepresentation by CSD actionable under New Jersey common law, and/or (b) any acts of misconduct under New Jersey common law with respect to CSD's wrongful use of Smart Vent's registered trademark "SMART VENT" in its distribution, marketing, promotion, offering for sale, and sale of CSD's goods.

30. Whether CSD's sales on Amazon.com and other platforms after November 1, 2017 were in contempt of the October 31, 2017 Order and Opinion of the Court.

**B. Defendant's statement of the legal issues in this case:**

1. Whether Smart Vent already received all of the injunctive relief it is entitled to in response to its unfair competition claims pertaining to TB-1, by way of the permanent injunction issued by the Court on November 1, 2017, which prohibits Crawl Space Doors from marketing its flood vents as TB-1 compliant.

2. Whether Crawl Space Doors' statements regarding TB-1 caused actual deception or a tendency to deceive in the marketplace.

3. Whether Crawl Space Doors' statements regarding TB-1 were material.

4. Whether Crawl Space Doors' statements regarding TB-1 resulted in actual harm to Smart Vent in the form of declining sales, loss of good will or the like.

5. Whether Crawl Space Doors made any false or misleading statements regarding the performance of its engineered flood vents, including the amount of area that those flood vents will service, in violation of Section 43(a) of the Lanham Act, 15 U.S.C. § 1125(a)(1)(B).

6. Whether Crawl Space Doors willfully made false or misleading statements regarding the performance of its engineered flood vents.

7. Whether Crawl Space Doors' statements regarding the performance of its engineered flood vents caused actual deception or a tendency to deceive in the marketplace.

8. Whether Crawl Space Doors' statements regarding the performance of its engineered flood vents resulted in actual harm to Smart Vent in the form of declining sales, loss of good will or the like.

9. Whether Crawl Space Doors' statements regarding the performance of its engineered flood vents were negligent.

10. Whether Crawl Spaced Doors' statements regarding the performance of its engineered flood vents resulted in actual harm to Smart Vent.

11. Whether Crawl Space Doors acted in bad faith in publicizing its design patents in the marketplace.

12. Whether Crawl Spaced Doors' publication of its design patents in the marketplace caused actual deception or a tendency to deceive

13. Whether Crawl Spaced Doors' publication of its design patents in the marketplace resulted in actual harm to Smart Vent.

14. Whether the mark "SMART VENT" is valid and legally protectable.

15. Whether the term "smart vent" is generic.

16. Whether the term "smart vent" is descriptive in that it conveys knowledge of the qualities or characteristics of the product (i.e., automatic flood vents) and has not acquired secondary meaning.

17. Whether Crawl Space Doors' use of the words "smart vent" in meta-tags constitutes use of Smart Vent's trademark "SMART VENT" to identify goods or services.

18. Whether Crawl Space Doors' use of the words "smart vent" in meta-tags caused confusion concerning the origin of Crawl Space Doors' flood vents.

19. Whether Crawl Space Doors' use of the words "smart vent" in meta-tags created misunderstandings in the marketplace that Crawl Space Doors and Smart Vent are associated or affiliated with one another.

20. Whether Crawl Space Doors' use of the words "smart vent" in meta-tags resulted in actual harm to Smart Vent.

21. Whether Smart Vent made, and continues to make, false or misleading statements which misrepresent the performance of Crawl Space Doors' flood vents in violation of Section 43(a) of the Lanham Act, 15 U.S.C. § 1125(a)(1)(B).

22. Whether Smart Vent willfully made false or misleading statements which misrepresent the performance of Crawl Space Doors flood vents.

23. Whether Smart Vent made, and continues to make, false or misleading statements that Crawl Space Doors' flood vents are not FEMA or NFIP compliant in violation of Section 43(a) of the Lanham Act, 15 U.S.C. § 1125(a)(1)(B).

24. Whether Crawl Space is entitled to the entry of a permanent injunction, under Section 34(a) of the Lanham Act, 15 U.S.C. § 1116 and/or or New Jersey common law, that (a) enjoins CSD and its affiliates, subsidiaries, officers, directors, employees, agents, representatives, licensees, successors, and assigns from making statements which (i)

misrepresent the performance of Crawl Space Doors' flood vents; or (ii) claim that Crawl Space Doors' flood vents are not FEMA or NFIP compliant and (b) requires CSD and its affiliates, subsidiaries, officers, directors, employees, agents, representatives, licensees, successors, and assigns to send and publish corrective advertising notices to all past customers or recipients of Smart Vent's false and misleading statements regarding Crawl Space Doors.

25. Whether Crawl Space Doors is entitled to recover its damages and/or Smart Vent's profits, with respect to Smart Vent's false or misleading statements which misrepresent the performance of Crawl Space Doors' flood vents or claim that Crawl Space Doors' flood vents are not FEMA or NFIP compliant.

26. Whether Crawl Space Doors is entitled to recover enhanced damages in this action pursuant to 15 U.S.C. § 1117(a), which permits damages to be trebled.

27. Whether Crawl Space Doors is entitled to recover the costs it incurred in this action as the result of Smart Vent's Lanham Act violations.

28. Whether there is any basis for Crawl Space to recover its attorneys' fees, under Section 35(a) of the Lanham Act, 15 U.S.C. § 1117(a), on the grounds that this action is an exceptional case.

#### **PART IX. MISCELLANEOUS**

Any additional stipulations of counsel and/or motions on other matters which require action of the court?

##### **A. Smart Vent**

1. Motion in Limine to strike the expert report of Dr. James Rice.
2. Motion in Limine to strike the expert report of Robert Wallace.
3. Motion in Limine to exclude evidence relating to Crawl Space's claim of unfair competition for Smart Vent's use of the phrase "FEMA Accepted" as barred by laches, estoppel, and the statute of limitations.
4. Motion in Limine to Preclude CSD from referencing the other litigations filed by Smart Vent.

5. Motion to Strike Crawl Space Doors' claim for damages.

##### **B. Crawl Space Doors**

1. Motion in Limine to strike the expert report and limit the testimony of John A. Miller.



2. Motion in Limine to strike the expert report and limit the testimony of Richard D. Crago.
3. Motion in Limine to strike the expert report of Eli Seggev.
4. Motion in Limine to strike the expert report of Tom Little and to preclude expert testimony.
5. Motion in Limine to preclude testimony and the introduction of evidence regarding the manufacture or performance of Smart Vent's flood vents, which are not at issue in this litigation or relevant to any claims or defenses.
6. Motion in Limine to preclude opinion testimony of Lori Malitski.
7. Motion in Limine to preclude introduction into evidence of documents produced by Lori Malitski on the basis of hearsay.
8. Motion in Limine to strike portions of the expert reports of Dana Trexler setting forth legal conclusions and to preclude testimony regarding same.
9. Motion in Limine challenging Attorneys' Eyes Only designation of certain documents necessary for use at trial.

C. At present, neither party is able to locate certain exhibits from the deposition of Todd O'Connell. Smart Vent reserves the right to use these exhibits at trial, and CSD reserves the right to object as appropriate.

**Any notice required to be given under Rules 404(b), 609(b), 803(24) and 804(b)(5), Federal Rules of Evidence? No.**

**PART X. NON-JURY TRIAL N/A**

**PART XI. JURY TRIAL**

A. No later than seven days prior to the scheduled trial date or at such time as the court may direct:

1. Trial brief
2. Written requests for charges to the jury
3. Proposed voir dire questions

**CONCLUDING CERTIFICATION**

We hereby certify by the affixing of our signatures to this Final Pretrial Order that it reflects the efforts of all counsel and that we have carefully and completely reviewed all parts of this Order prior to its submissions to the Court. Further, it is acknowledged that amendments to this Joint Final Pretrial Order will not be permitted except where the Court determines that manifest injustice would result if the amendment is not allowed.

/s/ Anthony J. DiMarino

Attorney for Plaintiff - Date: May 3, 2019

/s/ Emmett S. Collazo

Attorney for Plaintiff - Date: May 3, 2019

/s/ Siobhan K. Cole

Attorney for Defendant - Date: May 3, 2019

/s/ Morgan S. Birch

Attorney for Defendant - Date: May 3, 2019

Entry of the foregoing Joint Pretrial Order is hereby APPROVED this 17th day of May, 2019.



Karen M. Williams  
United States Magistrate Judge  
For the District of New Jersey



## **EXHIBIT ‘A’**

45 Elm Street, Lambertville, NJ 08530  
609.203.8935 (c) [johnart@sas.upenn.edu](mailto:johnart@sas.upenn.edu)

## PROFESSIONAL PROFILE

**Public Policy ~ Water Resources Engineering ~ Floodplain Management ~ Climate Adaptation ~ Expert Witness**  
Experienced public policy and water resources professional with specific focus on community resiliency. Nationally recognized proficiency in floodplain management, mitigation, policy and analysis. Qualified as an expert witness in floodplain and stormwater management. Committed public servant and active in professional organizations. Featured on [PBS NewsHour](#) and in [NJ Spotlight](#).

## PUBLIC POLICY EXPERIENCE

**Mitigation Liaison – FEMA Integration Team, New Jersey**  
FEMA REGION II

August 2018- Present  
West Trenton, New Jersey

- Embedded in the New Jersey Office of Emergency Management to bolster risk reduction strategies and plans and enhance statewide resiliency.

### **Fellow**

OFFICE OF UNITED STATES SENATOR ROBERT MENENDEZ

January 2017- April 2018  
Washington, D.C.

- Assisted on the reauthorization of the National Flood Insurance Program, reporting to Senior Advisor Jason Tuber.
- Collaborated with independent study adviser Howard C. Kunreuther, PhD, Professor of Decision Sciences and Business and Public Policy at the University of Pennsylvania Wharton School of Business.
- Funding from the Dept. of Earth & Environmental Science & [Wharton Public Policy Initiative](#) totaling \$13,000.
- Member of New Jersey Governor-elect Murphy's Environment & Energy Transition Committee.

### **Intern**

WHITE HOUSE, OFFICE OF MANAGEMENT AND BUDGET

May 2016 – August 2016  
Washington, D.C.

- Assisted with federal agency implementation of President Obama's Executive Order 13690 - Establishing a Federal Flood Risk Management Standard, and the Climate Action Plan in preparedness and adaptation.
- Supported colleagues, including supervisor Samantha Medlock, J.D., in the Climate Short Term Action Group on higher codes and standards, and insurance linked financing for natural hazard mitigation.

## WATER RESOURCE ENGINEERING EXPERIENCE

### **Associate**

PRINCETON HYDRO, LLC

December 2000 – December 2015  
Ringoes, New Jersey

- Managed projects involving stormwater, floodplain, forensic analysis, retrofits and wastewater management. Supervised design, planning and GIS professionals.
- Assisted community clients in sea level rise and flood risk resiliency. Featured on RadioTimes with Marty Moss-Coane, WHYY-FM 90.9 (National Public Radio) Philadelphia, PA [“Stronger Than the Storm? Superstorm Sandy's Two-Year Anniversary: Lessons Learned, Defining Recovery, and What the Future Holds.”](#) October 29, 2014.
- Advanced higher standards in municipal codes and ordinances, and regulations at the local and state levels.
- Qualified as an expert in stormwater and floodplain management in federal court and by courts in Pennsylvania and New Jersey. Presented testimony and submitted expert reports to numerous land use boards and governing bodies in New Jersey, Pennsylvania and New York.

### **Design Engineer**

CHESTER VALLEY ENGINEERS, INC.

May 1993 – December 1999  
Paoli, Pennsylvania

- Designed subdivisions and land developments.
- Concentrated on storm water management design, storm and sanitary sewer design, erosion and sedimentation control design, floodplain and dam break modeling, construction specifications, construction quantity and cost estimates, and preparation of federal, state, and local permit applications.

## GOVERNMENT VOLUNTEER EXPERIENCE

### **Vice Chair and Member**

CITY OF LAMBERTVILLE PLANNING BOARD

January 2004 – Present  
Lambertville, New Jersey

- Member of the Emergency Management Council.
- **FEMA Community Rating System Coordinator as volunteer (Class 7)**
- Chairman of Stormwater Management Committee.

2011-2018

**PASSAIC RIVER BASIN FLOOD COMMISSION**

- Created by the Governor of New Jersey by Executive Order, appointed by the Commissioner of the New Jersey Department of Environmental Protection.

**Member**

April 2005-August 2006

NEW JERSEY GOVERNOR'S DELAWARE RIVER FLOOD MITIGATION TASK FORCE

- Member of Technical Committee.

**PROFESSIONAL BOARD SERVICE EXPERIENCE**

**Member**

2014 – 2018

NEW JERSEY CLIMATE ADAPTATION ALLIANCE, ADVISORY COMMITTEE

- Science and Technical Advisory Panelist and Coauthor: <http://njadapt.rutgers.edu/docman-lister/conference-materials/167-njcaa-stap-final-october-2016/file> Featured in Climate Change documentary

**Legislative Committee Chair**

2007 – 2018

NEW JERSEY ASSOCIATION FOR FLOODPLAIN MANAGEMENT

- Past Chair and Founder.

**President**

2007

AMERICAN WATER RESOURCES ASSOCIATION – NEW JERSEY SECTION

- Vice President 2006; Secretary 2004-2005. Continued membership.

**Member of the Board – Region 2 Director**

2006 – 2009

ASSOCIATION OF STATE FLOODPLAIN MANAGERS

- Continued involvement with Association staff and leadership on national policy.

**ACCREDITATIONS**

**Professional Engineer**

September 1999-Present

PENNSYLVANIA AND NEW JERSEY (INACTIVE STATUS IN NEW YORK, DELAWARE AND MAINE)

**Certified Floodplain Manager**

March 2004-Present

ASSOCIATION OF STATE FLOODPLAIN MANAGERS

**Certified Stormwater Manager**

November 2010 -Present

AMERICAN PUBLIC WORKS ASSOCIATION

**AWARDS**

**Floodplain Management Leadership Award**

2010

NEW JERSEY ASSOCIATION FOR FLOODPLAIN MANAGEMENT

**Resolution of Recognition**

2010

CITY OF LAMBERTVILLE MAYOR AND COUNCIL

**President's Award**

2008

AMERICAN WATER RESOURCES ASSOCIATION – NEW JERSEY SECTION

**Founders Award**

2006

NEW JERSEY ASSOCIATION FOR FLOODPLAIN MANAGEMENT

**EDUCATION**

**Master of Environmental Studies**

May 2018

THE UNIVERSITY OF PENNSYLVANIA

Philadelphia, Pennsylvania

- Concentration in Environmental Policy; School of Arts & Sciences 2017-2018 Dean's Scholar for "outstanding academic record and intellectual promise"

**Bachelor of Civil Engineering**

May 1993

VILLANOVA UNIVERSITY

Villanova, Pennsylvania

- Recipient of the Civil Engineering Faculty Award; Chi Epsilon, Civil Engineering Honor Society, student Vice President; Graduate courses in Water Resources Engineering post-graduation.

## **EXHIBIT ‘B’**

**Richard D. Crago, Ph.D.**

Department of Civil and Environmental Engineering  
Bucknell University  
Lewisburg, PA 17837  
Phone: 570-577-1094  
E-mail: rcrago@bucknell.edu

**Current Position**

Professor of Civil and Environmental Engineering  
Bucknell University  
Lewisburg, PA 17837

**Professional Registration**

- Licensed Professional Engineer in Illinois (062-051227)

**Courses Taught**

- At Bucknell:
  - Fluid Mechanics, Water Resources Engineering, Hydrology, Open Channel Flow, River Mechanics, Mechanics I, Our Water Environment
- At Charles University (Prague, Czech Republic)
  - Open Channel Flow (How Streams work), Evaporation and Transpiration, Boundary-Layer Meteorology
- At University of Illinois at Chicago
  - Analytical Hydrology, Hydrometeorology, Engineering Hydrology, Hydraulic Design, Hydraulics and Hydrology

**Research Interests**

- Scientific hydrology
- Precision conservation: Using detailed spatial data and custom algorithms in a GIS to identify key locations for treatment / prevention of pollutants in overland flow.
- Land surface-atmosphere interactions including: Evapotranspiration; Urban shear stress modeling; Land surface energy and water balances; atmospheric boundary layer dynamics.
- Applications of remote sensing to hydrology.
- Unsteady open channel flow.
- Outcomes assessment in engineering education

**Other Professional Interests**

Hydrologic Consulting (as an independent consultant, primarily as an expert witness in law suits)

## Education

- CORNELL UNIVERSITY, Ithaca, New York  
School of Civil and Environmental Engineering.  
Ph.D., 1993, in Hydraulics and Hydrology  
MS, 1989, in Hydraulics and Hydrology
- WASHINGTON UNIVERSITY, St. Louis, Missouri  
BS in Civil Engineering, 1987
- GRINNELL COLLEGE, Grinnell, Iowa  
BA, Physics, 1986

## Employment

- *Bucknell University*, Assistant Professor of Civil and Environmental Engineering, 8/99 to 8/2003; Associate Professor from 8/2003 to 8/2009; Professor from 8/2009 to present.
- *Charles University* in Prague, Czech Republic. On leave from Bucknell from August 2012 to July 2013 as Researcher in the Department of Physical Geography and Geoecology.
- *University of Illinois at Chicago*, Assistant Professor (tenure track), 8/94-8/99.
- *NASA/Goddard Space Flight Center*, Hydrological Sciences Branch, Greenbelt, MD. Postdoctoral researcher on fellowship, 9/92 to 7/94.
- *Cornell University*, Ithaca, NY, Graduate Research Assistant, 6/88-8/92; Graduate Teaching Assistant, 8/87-6/88.
- *Webster McGrath and Carlson, Ltd.*, Wheaton, IL, May-August 1986 and 1987. Hydrologic and hydraulic watershed and stream modeling for land development.

## Peer Reviewed Journal Articles (\* indicates student co-author)

Papers accepted for publication, in press, or in print:

- Crago, R., Qualls, R., Szilagyi, J. and Huntington, J. , Reply to comment by Ma and Zhang on “Rescaling the complementary relationship for land surface evaporation”, *Water Resources Research*, 53, 6345-6344, doi:10.1002/2017WR021021. (Short reply to a comment.)
- Szilagyi, J. Crago, R., and Qualls, R., A calibration-free formulation of the complementary relationship (CR) of evaporation for continental-scale hydrology, *J. Geophysical Research*, 122, doi:10.1002/2016JD025611, 2016.
- Crago, R., Szilagyi, J., Qualls, R., and Huntington, J., Rescaling the complementary relationship for land surface evaporation, *Water Resources Research* 52, doi:10.1002/2016WR019753, 2016.
- Szilagyi, J., Crago, R., and Qualls, R., Testing the generalized complementary relationship of evaporation with continental-scale long-term water-balance data, *Journal of Hydrology*, 540, 914-922, 2016.
- Crago, R. and Qualls, R.J., Use of land surface temperature to estimate surface energy fluxes: Contributions of Wilfried Brutsaert and collaborators, *Water Resources Research*, 50, doi: 10.1002/2013WR015223, 2014.
- Crago, R. and Qualls, R., The value of intuitive concepts in evaporation research (published as a “letter” or technical note), *Water Resources Research*, 49, 6100-6104,

doi:10.1002/wrcr.20420, 2013.

- Crago, R.D., Okello\*, W., and Jasinski, M., Equations for the drag force and aerodynamic roughness length of urban areas with random building heights, *Boundary-Layer Meteorology*. DOI: 10.1007/s10546-012-9747-0, 2012.
- Crago, R.D., Qualls, R.J., and Feller\*, M., A calibrated advection-aridity evaporation model requiring no humidity data, *Water Resour. Res.* 46, W09519, doi:10.1029/2009WR008497, 2010.
- Suleiman, A., Al-Bakri, J., Duqqah, M., and Crago, R.D., Intercomparison of Evapotranspiration Estimates at the Different Ecological Zones in Jordan, *J. Hydrometeorology*, 9 (5), 903-919, 2008.
- Borak, J. S., Jasinski, M. F., and R Crago, Time series vegetation aerodynamic roughness fields estimated from MODIS observations, *Agricultural and Forest Meteorology*, 135, 252-268, 2005.
- Jasinski, M., Borak, J., and R. Crago, Bulk surface momentum parameters for satellite derived vegetation fields, *Agricultural and Forest Meteorology*, 133, 55-68, 2005.
- Crago, R. , N. Hervol\*, and R. Crowley\*, A complementary evaporation approach to the scalar roughness length, *Water Resources Research*, 41, W06017, doi:10.1029/2004WR003521 2005.
- Crago, R. and R. Crowley\*, Complementary relationships for near-instantaneous evapotranspiration, *J. Hydrology*, 300, 199-211, 2005.
- Crago, R. and A. Suleiman, Heat flux parameterization for sparse and dense grasslands with the Analytical Land Atmosphere Radiometer Model (ALARM), *Boundary-Layer Meteorology*, 114, 557-572, 2005.
- Suleiman, A. and R. Crago, Hourly and daytime total evapotranspiration using radiometric surface temperatures, *Agronomy Journal*, 96, 384-390, 2004.
- Suleiman, A. and R. Crago, Analytical land atmosphere radiometer model (ALARM) applied to a dense canopy, *Agricultural and Forest Meteorology*, 112 (3-4), 151-159, 2002.
- Zibognon\*, M., R. Crago, and A. Suleiman, Conversion of radiometric to aerodynamic surface temperature with an anisothermal canopy model, *Water Resources Research*, 38 (6), 3-1 to 3-6, 2002. .
- Suleiman, A. and R. Crago, Analytical land-atmosphere radiometer model, *Journal of Applied Meteorology*, 41, 177-187, 2002.
- Crago, R., and S. M. Richards\*, Nonkinematic effects in storm hydrograph routing, *ASCE Journal of Hydrologic Engineering*, 5(3), 323-326, 2000.
- Qualls, R.J., M. Wagstaff\*, and R. Crago, Equilibrium Evaporation and Positive Evaporation-Surface Temperature Relationships Across a Grassland, *Journal of the American Water Resources Association*, 35(5), 1125-1132, 1999.
- Jasinski, M., and R. Crago, Estimation of vegetation aerodynamic roughness of natural regions using frontal area density determined from satellite imagery, *Agricultural and Forest Meteorology*, 94(1), p. 65-77, 1999.
- Crago, R., Radiometric and equivalent isothermal surface temperatures, *Water Resources Research*, 34(11), 3017-3023, 1998.
- Crago, R., Comparison of the evaporative fraction and the Priestley-Taylor  $\alpha$  for parameterizing daytime evaporation, *Water Resources Research*, 32, 1403-1409, 1996.



- Crago, R., Conservation and variability of the evaporative fraction during the daytime, *J. Hydrology*, **180**, 173-194, 1996.
- Crago, R., Mixed layer convective turbulence theory with FIFE data, *Water Resources Research* **32**, 2767-2774, Aug., 1996.
- Crago, R. and W. Brutsaert, Daytime evaporation and the self-preservation of the evaporative fraction and the Bowen ratio, *J. Hydrology*, **178**, 241-255, 1996.
- Crago, R. and W. Brutsaert, Dependence of geostrophic drag on the intensity of convection, baroclinicity, and acceleration, *Boundary Layer Meteorology*, **73**, 211-225, 1995.
- Crago, R., M. Sugita and W. Brutsaert, Satellite-derived surface temperatures with boundary layer soundings and the surface pressure field to estimate regional sensible heat flux, *J. Geophysical Research*, **100** (D12), 25,447-25,451, 1995.
- Crago, R. and W. Brutsaert, The estimation of surface momentum flux under unstable conditions from the atmospheric pressure field, *Water Resources Research*, **30**, 617-623, 1994.
- Crago, R. and W. Brutsaert, A comparison of several evaporation equations, *Water Resources Research*, **28**, 951-954, 1992.

#### Other published papers

##### *Peer reviewed*

- Crago, R., Guaranteeing achievement of program educational outcomes while providing data for program improvement, *2008 ASEE Annual Conference Proceedings*, AC 2008-618, 2008.
- Crago, Daytime evaporation from conservation of surface flux ratios, *The Scaling Issue in Hydrology*, Edited by J.B. Stewart, E.T. Engman, R.A. Feddes and Y. Kerr, Institute of Hydrology, Wallingford, Oxfordshire, United Kingdom, 235-244, 1996.

##### *Not Peer Reviewed:*

- Crago, R. Interactive comment on "Comment on "Estimating actual, potential, reference crop and pan evaporation using standard meteorological data: a pragmatic synthesis" by McMahon et al. (2013)" by T. A. McMahan et al., *Hydrol. Earth Syst. Sci. Discuss.*, **10**, C4257-4259, [www.hydrol-earth-syst-sci-discuss.net/10/C4257/2013/](http://www.hydrol-earth-syst-sci-discuss.net/10/C4257/2013/), 2013.
- Crago, R., Interactive comment on "Does evaporation paradox exist in China?" By Z.T. Cong and D.W. Yang, *Hydrol. Earth Syst. Sci. Discuss.*, **5**, S969-S972, [www.hydrol-earth-syst-sci-discuss.net/5/S969/2008/](http://www.hydrol-earth-syst-sci-discuss.net/5/S969/2008/), 2008.
- Crago and Brutsaert, The estimation of regional evaporation from daily mean parameters during FIFE, in *Proceedings of AMS Symposium on FIFE*, American Meteorological Society, Boston, Mass, 152-153, 1990.

#### Reports

- Crago, R. and Meas, O. Miller Run Evaporation and Precipitation Budget, Final Report for Luce Foundation, 12/17/2010.
- Crago, R. Urban Momentum Roughness Parameters: Modeling and Simple Parameterization, Project Summary/Final Report for NASA grant NNX08AY39G, 10/28/09.
- Crago, R., Urban Roughness Parameters: Modeling and Wind Profile Analysis, Summary of Research/Final Report to NASA for grant NNX07AB89G, Dec. 20, 2007.



- Crago, R., M. Friedl, W. Kustas, and Y. Wang, Investigation of Aerodynamic and Radiometric Land Surface Temperatures, Final report to NASA for grant NAG5-8679, 8/14/2003.
- Crago, R., A. Suleiman, and M. F. Jasinski, Satellite-Based Estimation of Aerodynamic Roughness for Global Climate Studies, Final report to NASA for grant NAG5-10129, April 11, 2002.
- Jasinski, M. F. and R. Crago, Satellite-Based Estimation of Aerodynamic Roughness for Global Climate Studies, Final Report to NASA, for grant NAG5-8359, Aug. 8, 2000.
- Crago, R., M. Friedl, W. Kustas, and Y.-Q. Wang, Investigation of Radiometric and Aerodynamic Land Surface Temperatures, Year 2 Annual Report to NASA for grant NAG5-8679, March 2001.
- Jasinski, M and R Crago, Improved prediction of momentum and scalar fluxes using MODIS imagery, Year 2 Annual Report to NASA for grant NAG5-8699, March 2001.
- Crago, R., M. Friedl, W. Kustas, and Y.-Q. Wang, Investigation of Radiometric and Aerodynamic Land Surface Temperatures, Year 1 Annual Report to NASA for grant NAG5-8679, March 24, 2000.
- Jasinski, M. and R. Crago, Improved prediction of momentum and scalar fluxes using MODIS Imagery, Year 1 Annual Report to NASA for grant NAG5-8699, March, 2000.
- Crago, R., Parameterization of an anisothermal vegetation canopy, annual report to NASA for grant NAG5-7600, Nov. 9, 1999.

**Conference/Workshop Presentations (\* indicates student co-presenter)**

- Crago, R. and Qualls, R., Complementary Principle for evaporation: Impact of rescaling the relationship, *American Geophysical Union Fall Meeting*, December 14, 2017 New Orleans (oral presentation by R Crago).
- Singoyi, C., Crago, R.D., Ren, L., and Glathar, J., Mapping runoff flow paths and their pollution contribution potential: The impact of crops as a land cover category, *Susquehanna River Symposium*, Bucknell University, November 11, 2017 (oral presentation by C. Singoyi).
- Singoyi, C., Crago, R., Glathar, J. Ren, L., Runoff flow path mapping at Bucknell—Research, Classroom, and Community Perspectives, oral presentation by R. Crago, *Susquehanna River Symposium*, Bucknell University, Nov. 12, 2016.
- Singoyi, C., Crago, R., Glathar, J. Ren, L., Runoff flow path mapping at Bucknell—Research, Classroom, and Community Perspectives, e-poster presentation, *Digital Scholarship Conference*, Bucknell University, October 28-30, 2016.
- Crago, R., and Qualls, R., (presented by Crago) Plant canopy temperature and heat flux profiles: What difference does an isothermal skin make?, H51N-1578, poster presented at American Geophysical Union Fall Meeting, San Francisco, December 18, 2015.
- Qualls, R. and Crago R. (presented by Qualls), Characterization of the saturated condition potential evaporation and evaporative demand and their implications in the complementary relationship, H33:-01, INVITED talk at *American Geophysical Union Fall Meeting*, San Francisco, December 18, 2015.
- Pettaway, E., Crago, R. and Glathar, J., Precision Conservation Mapping of Buffalo Creek, *Susquehanna River Symposium*, Bucknell University, Nov. 13-14, 2015.

- Crago, R. and Qualls, R., (presented by Crago) Simultaneously maintaining the complementary relationship and the conservation of evaporative fraction during the daytime, poster presented at American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 9, 2013.
- Crago, R. A graphical representation of the evaporation solution space and the complementary relationship, poster presented at American Geophysical Union Fall Meeting, San Francisco, CA, December 7, 2011.
- Crago, R., Qualls, R., and Zhao, W., (presented by Crago) Foliage temperature profile responses to stomatal resistance and foliage density profiles, American Geophysical Union Spring Meeting, Toronto, Canada, May, 2009.
- Crago, R., Feller\*, M., Qualls, R., (presented by Crago) A Calibrated Advection-Aridity Model for Data-Sparse Areas, American Geophysical Union Spring Meeting, H43D-07, Fort Lauderdale, FL, May 29, 2008.
- Crago, R., Guaranteeing achievement of program educational outcomes while providing data for program improvement, ASEE 2008 Annual Conference Proceedings, Pittsburgh, PA, June 25, 2008.
- Crago, R., Qualls, R., and Zhao, W. (presented by Crago), Foliage Temperature Profile Modeling: The Role of Canopy Density and Stomatal Resistance Profiles, American Geophysical Union Spring Meeting, H51D-01, May Acapulco, Mexico, May 22-25, 2007.
- Crago, R., Lagrangian Transport Model Simulations of Foliage Temperature Based on Field Measurements, American Geophysical Union Spring Meeting, May 16:15h AN: H34B-01, Baltimore, MD, May 23-26, 2006.
- Jasinski, M.F., Borak, J.S., and Crago, R.D. (presented by Jasinski), Bulk Surface Momentum Parameters for Satellite-Derived Vegetation Fields, American Geophysical Union Joint Assembly (Spring Meeting, H23B-03, May, 2005.
- Crago, R. and R. Crowley\*, (presented by Crago) A Complementary Evaporation Approach to Scalar Roughness Length Estimation, American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 8, 2003.
- Suleiman, A. and R. Crago (presented by Suleiman), Analytical Land Atmosphere Radiometer Model (ALARM) applied to canopies of varied density, *International symposium on remote sensing of the environment*, Honolulu, HI, November, 2003.
- Crago, R. and A. Suleiman (presented by Crago), Integrating Analytical Land-Atmosphere Radiometer Model With the Energy Balance, American Geophysical Union Spring Meeting, Washington, DC, May 29, 2002
- Suleiman, A. and R Crago (presented by Crago), Analytical Land Atmosphere Radiometer Model Applied to Widely Differing Field Sites, American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 11, 2001
- Crago, R. and Suleiman, A. (presented by Suleiman), Analytical Land Atmosphere Radiometer Model applied to a dense grass canopy, American Geophysical Union Spring Meeting, Boston, May 31, 2001.
- Suleiman, A and R Crago (presented by Suleiman), Conversion of radiometric to aerodynamic surface temperature, American Geophysical Union, Fall Meeting, San Francisco, Dec. 19, 2000.
- Crago, R., A Suleiman, M Friedl, Y Wang, and W Kustas (presented by Crago), Conversion of radiometric to aerodynamic surface temperature, NASA/NOAA GAPP [GEWEX (Global

Energy and Water Cycle Experiment) Americas Prediction Project] and Hydrology Meeting, April 30-May 2, 2001, Potomac, MD.

- Matross, DM, MF Jasinski, and R Crago (presented by Crago), Estimation of vegetation aerodynamic roughness of a North American boreal forest using satellite imagery, American Geophysical Union, Fall Meeting, San Francisco, Dec. 15, 1999.
- Crago, R., Parameterization of an anisothermal vegetation canopy, poster presentation for NASA/Land Surface Hydrology Program Investigator's meeting, Columbia, MD, Nov. 2-3, 1999.
- Jasinski, M., and R. Crago (presented by M. Jasinski), Improved prediction of Momentum and Scalar Fluxes Using MODIS Imagery, presented at for NASA/Land Surface Hydrology Program Investigator's meeting, Columbia, MD, Nov. 2-3, 1999.
- Crago, R., M. Friedl, Y. Wang, and W. Kustas (presented by Crago), Investigation of aerodynamic and radiometric land surface temperatures, poster presentation for NASA/Land Surface Hydrology Program Investigator's meeting, Columbia, MD, Nov. 2-3, 1999.
- Crago, R. and M. Zibognon\* (presented by Crago), A parameterization of the anisothermal vegetation canopy, American Geophysical Union, Fall Meeting, San Francisco, Dec. 9, 1998.
- Jasinski, M., R. Crago, and P. Stewart (presented by Stewart), Parameterization of Vegetation Aerodynamic Roughness of Natural Regions Using Satellite Imagery, American Geophysical Union, Fall Meeting, San Francisco, Dec. 9, 1998.
- Crago, R., M. Wagstaff\* and R. Qualls (presented by Crago), Spatial variability of evaporation, soil moisture and surface temperature at FIFE 1989, American Geophysical Union Fall Meeting, San Francisco, Dec. 15, 1996.
- Crago, R., Daytime evaporation from conservation of surface flux ratios, Workshop on the Scaling Issue in Hydrology, Institute of Hydrology, Wallingford, Oxfordshire, United Kingdom, 10-12 June, 1996.
- Jasinski, M. and R. Crago (presented by Jasinski), Theoretical estimation of local aerodynamic roughness length and zero-plane displacement height using canopy density derived from satellite imagery, American Geophysical Union Spring Meeting, Baltimore, May 21, 1996.
- Crago, R., and W. Brutsaert (presented by Crago), Temporal variation of parameters which describe the partition of the surface energy budget, Earth Observing System (EOS) Hydrology Workshop, MIT, June 3-4, 1994.
- Crago, R., M. Sugita and W. Brutsaert (presented by Crago), Satellite-derived surface temperatures with boundary layer soundings and the surface pressure field to estimate regional sensible heat flux, American Geophysical Union Spring Meeting, Baltimore, May 24-28, 1993.
- Crago, R., Estimating the water vapor flux from land surfaces, U.S. Dept. of Energy workshop, New Research in the Science of Global Change, A Multidisciplinary View, Oakland, CA, Sept. 19-23, 1993.
- Crago, R. and W. Brutsaert (presented by Crago), Surface momentum flux at the regional scale from the atmospheric pressure field, American Geophysical Union Spring Meeting, Montreal, May 1992.
- Brutsaert, W. and R. Crago (presented by Brutsaert), The estimation of regional evaporation from daily mean parameters during FIFE, Amer. Meteorol. Society, Symposium on FIFE, Feb. 7-9, 1990.

### **Invited Seminars**

- Crago, R. Glathar, J. Ren, L., Pettaway, E., Kalnins, E., and Dhakal, R. (presented by Crago, Glathar, Kalnins, and Dhakal), Precision Conservation at Bucknell, Feb 17, 2016, Bucknell's *New Horizons* series.
- Crago, R., Glathar, J., Ren, L., and Pettaway, E. (presented by Crago), Precision Conservation at Bucknell, *Envision the Susquehanna: Data in the Confluence Region*, Regional workshop at Bucknell University, Feb 23, 2016.
- Czech Technical University of Prague, Faculty of Civil Engineering, Land Surface Roughness: Importance and Modeling, March 13, 2013.
- Charles University, Prague, Czech Republic, Department of Physical Geography and Geoecology, Land Surface Roughness: Importance and Modeling, 11/29/2012.
- Charles University, Prague, Czech Republic, Department of Physical Geography and Geoecology, Writing in English for International Journals, 10/25/2012.
- University of the Pacific, Stockton, CA, What Does Dimensional Analysis Have to Do With Pipe Flow? 3/12/99.
- Marquette University, Milwaukee, WI, Theoretical and Applied Research Topics in Land Surface Hydrology, 3/2/99.
- Bucknell University, Lewisburg, PA, Theoretical and Applied Research Topics in Land Surface Hydrology, 2/26/99.
- Michigan Technological University, Houghton, MI, An Application of Remote Sensing in Hydrology: Radiometric Vs. Aerodynamic Temperature of Vegetated Land Surfaces, 2/19/99.
- Illinois Dept. Of Transportation, Springfield, IL, Acoustics of Sound Transmission Over Noise Barrier Walls in the Turbulent Lower Atmosphere, 5/29/97.
- University of Florida, Dept. of Environmental Engineering, Regional evaporation from remotely sensed data and measurements in the lower atmosphere, Spring, 1992.
- Jet Propulsion Lab, Pasadena, CA, Evaporation estimates using remote sensing, Spring, 1992.
- U. S. Dept. of Agriculture, Agricultural Research Service, National Water Quality Laboratory, Durant, OK, Estimating surface fluxes from atmospheric and remotely sensed variable, Spring, 1992.
- University of Illinois at Chicago, Dept. of Civil Engineering, Mechanics, and Metallurgy, Chicago, IL, Land surface hydrology, Feb. 23, 1994.

### **Other Presentations**

- Managing Water Resources \ Managing Risk...a closer look at the failures at Oroville Dam, CA, Crago, R., Newlin J., Newlin, B., and Marosi, K., Bucknell University Engineering Week presentation, 2/22/17.

### **Funded Research Proposals**

- Miller Run Evaporation and Precipitation Budget, Henry Luce Foundation, Susquehanna River Initiative. P.I., R. Crago, \$7,500, Summer 2010.
- "Urban Momentum Roughness Parameters: Modeling and Simple Parameterization". PI: R.



Crago, \$25,000 funded by NASA, 7/31/08-7/30/09.

- “Urban Momentum Roughness Parameters: Modeling and Wind Profile Analysis”. PI: R. Crago; Funded by NASA, September 27, 2006 for 1 year. Total funded amount \$25,000.
- “Satellite-Based Estimation of Aerodynamic Roughness for Global Climate Studies”, NASA/GSFC Director’s Discretionary Fund. Principal Investigator: Michael Jasinski; Co-PI: Richard Crago; Submitted: 9/30/2000; Duration: 1 year; Amount requested by R. Crago: \$5000; Funded Amount going to R. Crago: \$5000.
- “Investigation of Aerodynamic and Radiometric Land Surface Temperatures”, NASA Land Surface Hydrology Program; Principal Investigator: Richard Crago; Co-PIs: Mark Friedl, William Kustas, Yeqiao Wang; Submitted: 11/24/98, Duration: 3 years; Amount requested by R. Crago (Bucknell): \$195,510; Project total: \$292,415; Status: Funded amount going to R. Crago: \$195,510.
- “Improved Prediction of Momentum and Scalar Fluxes using MODIS Imagery”, NASA Land Surface Hydrology Program; Principal Investigator: Michael Jasinski; Co-PI: Richard Crago; Submitted: 11/24/98; Duration: 3 years; Project total (approx): \$360,000; Status: Funded amount going to R. Crago: \$56,251;
- “Parameterization of an Anisothermal Vegetation Canopy”, NASA Land Surface Hydrology Program; Principal Investigator: Richard Crago (no co-PIs); Duration: 1 year; Starting Date: 07/15/1998; Funded Amount going to R. Crago: \$50,006.
- “Satellite-Based Estimation of Aerodynamic Roughness for Global Climate Studies”, NASA/GSFC Director’s Discretionary Fund; Principal Investigator: Michael Jasinski; Co-PI: Richard Crago; Submitted: 09/24/98; Duration: 1 year; Amount requested by R. Crago: \$20,000; Project total: \$68,000; Funded Amount going to R. Crago: \$15,000
- “Title: Land Surface Processes in the Integrated Hydrology of a Watershed”, Department of Energy Global Change Distinguished Postdoctoral Fellowships (Fellowship applicant) Dates: 10/92 to 7/94; Total budget: \$72,000 (awarded)
- “The Use of Boundary Layer Profiles with Remotely Sensed Data to Determine the Regional Surface Energy Budget”, The NASA Graduate Student Researchers program fellowships; Dates: 7/88 to 7/92; Total budget: \$76,000 (awarded).

#### **Workshops and Training**

- GIS for Hydraulic and Hydrologic Modeling Using ArcGIS Desktop, Charleston, SC, June 25-27, 2014.

#### **Other Professional Activities**

- Editorial board member for *AUC Geographica*
- *Reviewer for:* Water Resources Research, Journal of Hydrology, Advances in Water Resources, ASCE Journal of Hydrologic Engineering, Journal of Applied Meteorology, Reviews of Geophysics, Remote Sensing of Environment, Journal of Environmental Informatics, Soil Science Society of America Journal; Geography Compass; Hydrology and Earth Systems Science; Geophysical Research Letters; Journal of the American Water Resources Association
- *Text book reviewer:* John Wiley and Sons
- *Proposal reviews:* NASA, NSF, Hungarian NSF, CERN (Great Britain)
- *Other reviews:* Workshop on Scaling up hydrological variables using remote sensing, 10-

12 June, 1996, Institute of Hydrology, Wallingford, United Kingdom.

- *Proposal Review Panels:*
  - USEPA, Exploratory Research – Physics, June 9-10, 1998.
  - NSF/EPA, Regional Hydrologic Vulnerability to Global Climate Change, Washington, D.C. July 26-28, 1995
  - NASA, Public Use of Earth and Space Science Data Over the Internet, Greenbelt, MD, May 23, 1994.
- Co-Coordinator for Outstanding Student Paper Awards in Hydrology, American Geophysical Meeting, Spring, 2008.
- *Convened Special session* on Land-Atmosphere Interactions, Fall 1994 AGU meeting.
- *CASES* (Cooperative Atmosphere-Surface Exchange Study) Symposium, Wichita, Kansas, Feb. 22-24, 1995.
- *Invited contribution* to Workshop on Scaling up hydrological variables using remote sensing, 10-12 June, 1996, Institute of Hydrology, Wallingford, United Kingdom.
- *Member of:* American Society for Engineering Education  
American Society of Civil Engineers  
American Geophysical Union.
- External reviewer for tenure and for promotion decisions (Idaho State University, University of Nebraska, Lincoln)

#### **Awards and Honors**

- *U.S. Dept. of Energy Global Change Distinguished Postdoctoral Fellowship*, 1992-94.
- *Editor's Citation for Excellence in Refereeing for Water Resources Research*, 1993.
- *NASA Graduate Student Researchers Program Fellowship*, 1988-1992.
- *Senior Class Award for Academic Excellence*, Dept. of Civil Engineering, Washington University, 1987.
- *Class of 1980 Scholarship*, Washington University, 1985-1987.
- *Member* Tau Beta Pi and Chi Epsilon, 1986.
- *Grinnell College Scholarship*, 1982-84.

#### **Undergraduate Research Projects**

- Chanda Singoyi (at Bucknell): Precision Conservation—testing NDFI (summer, 2016).
- Elyse Pettaway (at Bucknell): Precision Conservation to identify key locations for treatment of non-point source pollutants in overland flow (summer, 2015).
- Jordan Makansi (at Bucknell): Test of urban canopy drag model using published wind tunnel data (upcoming during spring, 2012).
- Becca Shopiro (at Bucknell): Water budget monitoring and modeling for the Dana green roof, summer 2011.
- Oudam Meas (at Bucknell): Water budget for Miller Run (summer 2010).
- Winnie Okello (at Bucknell): Wind drag on urban canopies (summer 2009); Investigation of detention basin volume calculations for very low release rates (Fall 2009).
- Meghan Feller (at Bucknell): A Calibrated Advection-Aridity Model for Use in Data-Sparse Areas, Summer, 2007

- Ben Erker (at Bucknell). Water Budget of a Watershed Dominated by Subsurface Storm Flow: Impact of Urbanization, Summer 2005.
- Nikki Hervol (at Bucknell). Turbulent Transport Efficiency in Vegetation Canopies, Summer 2004.
- Raphael Crowley (at Bucknell). Project: Complementary Evaporation, Summer, 2003
- Raphael Crowley (at Bucknell). Project: Topographic impacts on rainfall/runoff calculations, Summer, 2002.
- Kristin Steen (now Kristin Langway) (at Bucknell). Project: Watershed Hydrology Modeling, Summer 2001.
- Aung Thurain (at Bucknell). Projects: Land surface hydrology at Bucknell web page development, hydrologic modeling of Buffalo Creek. Summer, 2000.
- Carolyn Zeiner (at Bucknell). Project: Anisothermal vegetation canopy model calibration Spring, 2000.
- Arsalan Khan (at UIC). Project Title: Detention basin design in the presence of time-varying backwater effects

#### **Graduate Student Research**

- Mark R. Wagstaff (at UIC). Masters thesis title: Spatial Variability of Land Surface Evaporation. Graduation requirements completed: January 1997 (defended 1/17/97). Current position: Civil Engineer at Harza Engineering Company, Chicago.
- S. Mark Richards (at UIC). Masters thesis title: Significance of dynamic terms of the St. Venant equations. Graduated Spring, 1998. Current position: Project Engineer/Hydrologist at Webster, McGrath and Ahlberg, Ltd., Consulting Engineers, Wheaton, IL.
- Marcel Zibognon (at UIC). Masters thesis title: Parameterization process of land surface temperature of an anisothermal vegetation canopy. Defended July 6, 1999. Currently, Ph.D. candidate in hydrology, Colorado State University.
- John Yagesic (at UIC). Enrolled in 4-credit graduate research course, 1997. Topic: Non-kinematic effects on flood waves induced by channel constrictions and expansions.  
Current position: Environmental Engineer for the US EPA.
- Kalyan Yamijala (at UIC). Enrolled in 4-credit graduate research course, 1998. Topic: Equivalent isothermal temperatures of anisothermal vegetated surfaces.

## EXHIBIT 'C'





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## **Dana M. Trexler, CPA, CFF**

Partner

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**D:** 215.881.8147

**C:** 215.205.0098

### **EDUCATION AND CERTIFICATIONS:**

- Master's in Business Administration, University of Pennsylvania, The Wharton School (2001)
- Bachelors of Science, Accounting, and completed the requirements for a French major, Bucknell University (1994)
- Certified Public Accountant, Licensed in the Commonwealth of Pennsylvania (Certificate #CA-034551-L)
- Certified in Financial Forensics

### **RANGE OF EXPERIENCE:**

Dana Trexler is EisnerAmper's Philadelphia Financial Advisory Services practice leader where she specializes in providing expert testimony on damages in complex commercial and intellectual property disputes, performing forensic investigations, and conducting contract compliance engagements.

Ms. Trexler's dispute experience includes assessing damages in litigation and arbitration matters for both plaintiffs and defendants in disputes involving alleged patent infringement, theft of trade secrets, breach of contract, post-acquisition earn-out and payment calculations, breach of employment agreements, business interruption losses, and insurance claim negotiations. Ms. Trexler has evaluated and prepared economic damages in the form of lost profits, price erosion, unjust enrichment, reasonable royalties, diminution in value, and cost recovery in a variety of industries including: technology, pharmaceutical, biotechnology, medical devices, professional services, financial services, and manufacturing. Ms. Trexler has also provided economic analysis utilized in injunction hearings.

Ms. Trexler's forensic investigation experience includes leading and participating in both investigative and forensic accounting projects related to allegations of financial reporting fraud; management and/or employee embezzlement schemes; health care fraud and abuse; and violations of anti-corruption regulations, including the Foreign Corrupt Practices Act (FCPA) and UK Bribery Act. Ms. Trexler is also experienced in performing integrity due diligence in connection with various acquisitions, investigations, and vetting potential business partners to identify risk relevant information related to the activities, background, reputation, relationships, and incidences of corruption.

Ms. Trexler's contract compliance experience includes examining the underlying records supporting payments made under licensing agreements, supply agreements, manufacturing agreements, tolling agreements, and profit-sharing arrangements, where the payment terms are based on a metric under the control of one party in the agreement (e.g. net sales, net units shipped, actual manufacturing costs, etc.), to assess compliance with the payment terms under the agreement. Representative industries in which Ms. Trexler has performed contract compliance examinations include: technology, pharmaceutical, biotechnology, medical device, security services, and manufacturing.



# EISNERAMPER

## **EMPLOYMENT HISTORY**

**EisnerAmper LLP** – Financial Advisory Services, Partner (August 2012 - Present)

**ParenteBeard LLC** – Forensics, Litigation and Valuation Services, Principal (February 2012- August 2012)

**PricewaterhouseCoopers, LLP** – Forensic Services, Director (2004 to February 2012)

**PricewaterhouseCoopers, LLP** – Forensic Services, Manager (1999 to 2004)

**Coopers & Lybrand / PricewaterhouseCoopers LLP** – Forensic Services Senior Associate, (1997 to 1999)

**Coopers & Lybrand** – Assurance, Senior Associate (1996 to 1997)

**Coopers & Lybrand** – Assurance, Associate, (1994 to 1996)

## **PROFESSIONAL AND BUSINESS AFFILIATIONS:**

- American Institute of Certified Public Accountants – Member (1996 to the present)
- Pennsylvania Institute of Certified Public Accountants – Member (1995 to the present)
- American Bar Association – Associate Member (2010 to the present)
- Philadelphia Bar Association – Associate Member (2010 to the present)
- Intellectual Property Owners Association – Member (2016)
- Licensing Executive Society – Member (2013 to the present)
- DRI – The Voice of the Defense Bar – (Member 2016-present)
- Women of EisnerAmper Committee – Philadelphia Chairperson (2014 to present)
- Bucknell University Alumni Association of Philadelphia – Member (1994 to the present); Co-President (2005 to 2007)
- Philabundance – Finance Committee Member (2005 to 2009)
- Philabundance – Board of Directors (2006 to 2009)
- PricewaterhouseCoopers' Great Place to Work Leadership Committee - Chair of People Development & Coaching Committee (2002 to 2011)

## **FOREIGN LANGUAGE CAPABILITIES:**

- French – Proficiently read, speak, and write

## **PRESENTATIONS:**

- "Damages in Intellectual Property Litigation" – In-House CLE, May 10, 2018
- "Hot Topics in Patent Damages – A Damages Expert's Perspective" – In-House CLE, March 5, 2018
- "Seeking Expert Advice – How to Deal with Survey, Industry and Damage Experts in Trademark and Copyright Cases" – West Legal Edcenter Webinar, January 22, 2018
- "Creating Value When "There's No There There": Intellectual Property/Alternative Assets" – TMA Mid-Atlantic Regional Symposium, June 8, 2017
- "Fraud Awareness for Nonprofit Organizations" – EisnerAmper LLP, Philadelphia, PA, February 2, 2017
- "Apple Vs. Samsung: Takeaways From the Smartphone Wars"- Philadelphia Bar Assoc., January 25, 2017



## EISNERAMPER

- "Use and Abuse of Expert Witnesses in Trademark and Copyright Litigation"- Clear Law Institute, Webinar, January 9, 2017
- "Forensic Accounting Webinar" – McDevitt & Kline LLC, Philadelphia, Pennsylvania, December 9, 2016
- "Show Me the Money – A Primer on Lanham Act Damages" – New York Intellectual Property Lawyers, Association, Uniondale, New York, November 10, 2016
- "Hot Topics in IP Damages: Evolving Case Law" – CenterForce IP Strategy Summit, New York, New York, October 27, 2016
- "How to Effectively Explain Damages to a Jury" – DRI Business Litigation Seminar, Nashville, Tennessee, May 5, 2016
- "The Yates Memo – What You and Your Audit Committee Need to Know" – The Institute of Internal Auditors Philadelphia Chapter, Philadelphia, Pennsylvania, April 29, 2016
- "Effective Uses of Financial Experts" - Legal Intelligencer Litigation Summit, Philadelphia, April 6, 2016
- "Forensic Accounting & Litigation: Hot Buttons in 2016 LIVE Webcast" – The Knowledge Group, March 17, 2016
- "Threat and Fraud Analytics" – The Institute of Internal Auditors Philadelphia Chapter, Philadelphia, PA, November 23, 2015
- "Accountant's Role in Forensic Investigations and Disputes" – Brindisi Tax Academy, Radnor, PA, November 19, 2015
- "Effective Uses of Financial Experts" – Pennsylvania Bar Institute 9<sup>th</sup> Annual Intellectual Property Law Institute, Philadelphia, PA, April 29, 2015
- "Hot Topics in Corporate Internal Investigations" – Legal Intelligencer Litigation Summit, Philadelphia, April 10, 2015
- "Trends in IP Damages" – CenterForce IP Strategy Summit: Enforcement – NYC, March 26, 2015
- "Foreign Corrupt Practices Act: The Law, Current Trends, and Compliance" – New Jersey Legal Journal – In House Counsel Seminar, September 16, 2014
- "Management 101 Concepts and Applications: Building a Successful Company in Today's World" – Bucknell Professional Network, September 9, 2014
- "Deal Valuation & Maximizing Potential" – Boston Patent Law Association - License Committee Seminar, May 1, 2014
- "Deposing Financial Experts" – Pennsylvania Bar Association, April 23, 2014
- "Trends and Considerations in Intellectual Property Damage Calculations", Philadelphia Bar Association, Intellectual Property Committee, October 9, 2013
- "Vetting and Screening Third Parties: How to Uncover Corrupt Behavior and Prevent Vicarious Liability" – American Conference Institute Foreign Corrupt Practices Association Boot Camp, San Francisco, CA, September 27, 2011
- "Dana Trexler Smith on Third-Party Risks in an Era of Increased Anti-corruption Enforcement", Bulletproof Blog™, February 3, 2011
- "Raising Awareness of Fraud & Integrity Issues", PricewaterhouseCoopers' Year-end Alumni Event, December 3, 2010
- "Hot Topics in Bribery and Foreign Corruption Panel Session" – PricewaterhouseCoopers' Year-end Alumni Event, December 7, 2009



## EISNERAMPER

### **PUBLICATIONS:**

- "How to Attract and Retain Young Women in Accounting", *Philadelphia Business Journal*, May 25, 2017
- "The Benefits of Game Theory in Negotiations and Mediations", co-authored with Gary H. Levin of BakerHostetler, *The Legal Intelligencer*, October 6, 2015
- "Compliance Monitoring Just Makes Good Business Sense", *Pennsylvania Institute of Certified Public Accountants Journal*, Spring 2013
- "Expert Discusses Contract Audit and IP Damages Calculation", *Metropolitan Corporate Counsel*, Volume 21, No. 2, February 2013
- "Franchisors: Exercise Your Contractual Rights", *E-Commerce Law & Strategy*, Volume 24, Number 11, March 2008



# EISNERAMPER

## Dana Trexler Smith, CPA, CFF

### Federal Rule 26 Disclosures - Testimony

<b><u>Date</u></b>	<b><u>Jurisdiction</u></b>	<b><u>Type</u></b>	<b><u>Matter</u></b>
2017	United States District Court for the Eastern District of Virginia	Deposition	SwimWays Corporation and Kelsyus LLC v. Aqua-Leisure Industries, Inc.
2017	American Arbitration Association, Louisville, Kentucky	Deposition	The Ashcroft Group, LLC v. Rubicon Waste, LLC
2017	United States District Court for the Middle District of Pennsylvania	Deposition	AVCO Corporation v. Turn and Bank Holdings, Inc. and Precision Airmotive v. AvStar Fuel Systems, Inc.
2017	United States Court of Chancery of the State of Delaware	Trial	Eagle Force Holdings, LLC and EF Investments, LLC v. Stanley V. Campbell (C.A. NO. 10803-VCMR)
2016	United States District Court for the District of Delaware	Deposition	Centrak, Inc. v. Sonitor Technologies, Inc. (C.A. No. 14-183-RGA)
2016	United States District Court for the Middle District of Florida, Tampa Division	Deposition	Connectus LLC d/b/a eDegree Advisor v. Ampush Media, Inc., and DGS EDU, LLC (8:15-cv-02778-VMC-JSS)
2016	United States District Court Eastern District of Virginia, Norfolk Division	Deposition	SwimWays Corporation and Kelsyus LLC v. Bestway (USA), Inc. (1:16-cv-608-LMB-IDD)
2016	United States District Court District of Delaware	Deposition	TL of Florida, Inc. v. Terex Corporation, d/b/a Terex Construction Americas (1:13-cv-020009-LPS)
2016	United States Court of Chancery of the State of Delaware	Trial	inTEAM Associates, LLC, as successor-in-interest to School-Link Technologies, Inc. v. Heartland Payment Systems, Inc. (11523-VCN)



# EISNERAMPER

## Dana Trexler Smith, CPA, CFF

### Federal Rule 26 Disclosures - Testimony

<u><b>Date</b></u>	<u><b>Jurisdiction</b></u>	<u><b>Type</b></u>	<u><b>Matter</b></u>
2016	United States Court of Chancery of the State of Delaware	Deposition	inTEAM Associates, LLC, as successor-in-interest to School-Link Technologies, Inc. v. Heartland Payment Systems, Inc. (11523-VCN)
2015	American Arbitration Association, Porter County, Indiana	Arbitration	Metal Services LLC, d/b/a Phoenix Services LLC v. ArcelorMittal Burns Harbor LLC
2015	American Arbitration Association Porter County, Indiana	Deposition	Metal Services LLC, d/b/a Phoenix Services LLC v. ArcelorMittal Burns Harbor LLC
2015	Court of Common Pleas Lebanon County, Pennsylvania	Trial	City of Lebanon, Jonestown Borough, North Cornwall Township, North Lebanon Township, North Londonderry Township, Northern Lebanon School District, Palmyra Area School District, South Lebanon Township, South Londonderry Township, Swatara Township, Union Township, and West Lebanon Township vs. Cornwall Borough, Heidelberg Township, North Annville Township, West Cornwall Township, and Bethel Township (2012-01222)
2015	United States Court of Chancery of the State of Delaware	Trial	Revolution Retail Systems, LLC v. Sentinel Technologies, Inc., Tidel, Inc., Tidel Engineering, LP (10605-VCP)
2015	United States Court of Chancery of the State of Delaware	Deposition	Revolution Retail Systems, LLC v. Sentinel Technologies, Inc., Tidel, Inc., Tidel Engineering, LP (10605-VCP)
2014	United States District Court Eastern District of Pennsylvania	Deposition	Branch Banking and Trust Company v. Maxim Integrated Products, Inc. (2:12-cv-00945-JFC)



# EISNERAMPER

## Dana Trexler Smith, CPA, CFF

### Federal Rule 26 Disclosures - Testimony

<b><u>Date</u></b>	<b><u>Jurisdiction</u></b>	<b><u>Type</u></b>	<b><u>Matter</u></b>
2014	Court of Common Pleas Lebanon County, Pennsylvania	Deposition	City of Lebanon, Jonestown Borough, North Cornwall Township, North Lebanon Township, North Londonderry Township, Northern Lebanon School District, Palmyra Area School District, South Lebanon Township, South Londonderry Township, Swatara Township, Union Township, and West Lebanon Township vs. Cornwall Borough, Heidelberg Township, North Annville Township, West Cornwall Township, and Bethel Township (2012-01222)
2014	American Arbitration Association	Arbitration	Allscripts Healthcare, LLC v. Etransmedia Technology, Inc. (31 117 00223 13)
2013	United States District Court Eastern District of Pennsylvania	Deposition	Synthes, Inc., Synthes USA HQ, Inc., Synthes USA, LLC, Synthes USA Sales, LLC, and Synthes USA Products, LLC v. Emerge Medical, Inc., f/k/a Emerge Surgical, Inc., John P. Marotta, Zachary W. Stassen, Eric W. Brown, Charles Q. Powell, and John Does 1-10 (2:11-cv-01566-RB)



## Exhibit D



## Dr. Eli Seggev

### Expert Witness Experience

Expert testimony on trademark infringement matters	Designing, conducting, analyzing and testifying about the results of survey research in Intellectual Property and Consumer Behavior, including: likelihood of confusion, trade dress, dilution, secondary meaning, genericness, misleading advertising, etc.	2003 to present
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### Business Experience

President	IP Survey Research	2010 to present
Founder & Director	TYDACOMM Ltd. (Nigeria)	2013 to present
Business strategy and marketing consulting	Developing business plans, strategic directions, marketing plans and funding strategies for a variety of clients, including: Fortune 500 company, technology startups, and various consumer product and real estate ventures. Advising telecoms entering Sub-Saharan African markets.	2005 to present

Expert witness consultant	Keegan and Company	2003 to present
Marketing research consultant	Synovate (Market Research), New York, NY	1999 - 2002
Founder and CEO	Marketing Strategy & Planning, Inc. (MS&P) New York, NY	1985 - 1999
Founder and CEO	Marketing Systems, Inc., New York, NY	1980 - 1984
Various marketing research and consulting positions	Audits & Surveys, Inc.; Benton & Bowles Advertising; Decisions Center; Seggev Consulting	1973 - 1980

### Academic Experience

Associate Professor of Marketing	Pace University, New York, NY	1982 - 1992
Associate Professor of Marketing	Baruch College, New York, NY	1975 - 1982
Associate Professor of Marketing	Long Island University, NY	1970 - 1975
Visiting Lecturer in Marketing	Tel Aviv University, Israel	1971 - 1972
Assistant Professor of Marketing	Syracuse University, Syracuse, NY	1969 - 1970

### Education

Ph.D.	Syracuse University, Syracuse, NY	1969
MBA	University of Michigan, Ann Arbor, MI	1965
B.A. (Social Sciences)	The Hebrew University, Jerusalem, Israel	1963

### Publications

- "Values Added from Internet Research," *ESOMAR Net Effects Worldwide Internet Conference*, (2001) (with C. Eichman, A. Mezzasalma and G. Licastro)
- "Marketing Research—the Marketing Strategy Engine," *The Institute of International Research Conference: Customer Marketing for Newly Deregulated Industries*, (1998)
- "The Pickax, The Shovel, The Bulldozer and the Head Lamp," *Working Paper*, (1998)
- "Fusing Attitudinal and Behavioral Data in Data Mining," *Working Paper*, (1998)
- "Gaining Competitive Advantage Through Customer-Focused Marketing," *Idaho and Montana Banker Association Annual Convention*, (1997)
- "A Role in Flux," *Marketing Management*, (1995)
- "Getting the Most Out of Your Customer Satisfaction Measurement," *Consumer Banking Digest*, (1993)
- "Advertising Effectiveness Measurement for Contribution-Based Compensation," *Journal of Advertising Research*, (1992)
- "Disconfirmed Expectancy: A Time-Impact Analysis," (with A. Shuv-Ami), *Proceedings of the 1984 Academy of Marketing Science Annual Conference*
- "Testing the Strategic Fit of Financial Services Advertising," *Advertising Research Foundations Key Issues Workshop*, (1983)
- "Testing Persuasion by Strategic Positioning," *Journal of Advertising Research*, (1982)
- "Brand Assortment and Consumer Brand Choice," *Journal of Marketing*, (1970)

### Awards

American Marketing Association Dissertation Award for best doctoral dissertations (1969)

**Eli Seggev, Ph.D.—Expert Witness Experience**

***SNACK FOODS***

Ezaki Glico USA v. Lotte International America Corp.—United States District Court, District of New Jersey (2018)

Genericness—Consulting

***PHARMA***

Merck & Co., Inc., and Merck Sharp and Dohme Corp. v. Merck KGAA—United States District Court, District of New Jersey (2018)

Trademark Infringement—Consulting

***NEW CAR FINANCING***

Donald Rainsbarger and Donna Rainsbarger, v. ALASKA USA FEDERAL CREDIT UNION—The Superior Court for the State of Alaska, Third Judicial District at Anchorage (2018)

Study of Perception of Car Financing Information—Report

***KERATINDOSE SHAMPOO***

Brandi Price and Christine Chadwick, et al v. L'Oréal USA, Inc. and Matrix Essentials, LLC—U.S. District Court, Southern District of New York (2017)

Study of Materiality of Contested Claim—Deposition

***ZIPLOC PLASTIC BAGS***

S.C. Johnson & Son, Inc. v. Minigrip, LLC—U.S. District Court, Western District of Wisconsin (2017)

Study of Consumer Perceptions of Similarity Among Seven Plastic Food Bags—Deposition

***HOME FLOOD VENTS***

Smart Vent, Inc. v. USA Floodair Vents, Ltd.—U.S. District Court for the District of New Jersey (2017)

Perceptions of Claims—Materiality Report

***CREDIT CARDS***

Black Card, LLC. V. Visa USA, Inc.—U.S. District Court for the District of Wyoming (2016)

Rebuttal of Likelihood of Confusion Study—Report

***HOME FLOOD VENTS***

Smart Vent Products, LLC v. Crawl Space Door Systems, Inc.—U.S. District Court for the District of New Jersey (2016)

Genericness and Rebuttal

***PROTECTIVE GEAR***

Ass Armor, LLC v. Under Armour, Inc.—U.S. District Court Southern District of Florida (2016)

Litigation Research Consulting

***BLOOD GLUCOSE MEASUREMENT SYSTEM***

LifeScan, Inc. and Johnson & Johnson v. PharmaTech Solutions, Inc. and Decision Diagnostics Corp.—United States District Court Northern District of California, Oakland Division (2016)

Trademark Infringement and False Advertising—Research Report

***TIRE WARRANTIES***

Brian Jeffery Fratilla et al v. Big O Tires, LLC—Superior Court of the State of California  
County of San Diego (2016)  
Class Action: Study of Tire Warranty Purchase Motivations and Understanding of  
Warranty Parameters—Report

***BEVERAGE ALCOHOL***

Ole Smoky Distillery, LLC v. Smoky Mountain Moonshine—U.S. PPTO (2015)  
Likelihood of Confusion Study—Report

***DECORATIVE LIGHTING FIXTURES***

Barn Light Electric Company, LLC v. Barnlight Originals, Inc.; and Hi-Lite Manufacturing  
Company, Inc.; and Jeffrey L. Ohai—U.S. District Court Middle District of Florida (2015)  
Likelihood of Confusion Rebuttal—Deposition

***COSMETICS***

Donna Tomasino v. The Estee Lauder Companies—U.S. District Court Eastern District of New  
York (2015)  
Class Action—Deceptive Advertising—Litigation Research Consulting

***AVEENO BABY PRODUCTS***

Heidi Langan et al. v. Johnson & Johnson Consumer Companies. Inc.—U.S. District Court  
District of Connecticut (2015)  
Class Action—Deceptive Labeling—Report and Deposition

***ENERGY PRODUCTS***

Ortega et al. v. Natural Balance, Inc. et al.—U.S. District Court Central District of California  
(2014).  
Class Action—Deceptive Advertising—Report and Rebuttal

***HEARING AID DEVICES***

Action Direct Marketing, Inc. v. METX, LLC et al.—U.S. District Court Western District of  
Texas Waco Division (2014)  
Likelihood of Confusion—Report

***LIPSTICK***

Carol Leebove, Wanda Santa, et al. V. Maybelline LLC (2013)—U.S. District Court Southern  
District of New York (2013)  
Class Action—Advertising Claim Research—Deposition

***WINE***

Baroness Small Estates Inc. v. BJ's Restaurant Inc.—U.S. District Court Central District of  
California Santa Ana (2012)  
Likelihood of Confusion—Rebuttal Report

***SOCIAL MEDIA PLATFORM DESIGN***

Timelines v. Facebook—U.S. District Court Northern District of Illinois Eastern Division  
(2012)  
Likelihood of Confusion and Rebuttal of Genericness Survey—Deposition

***CAT FOOD***

Weruva International, Inc. v. Pets Global, Inc.—U.S. District Court Massachusetts (2012)  
Misleading advertising on cat food labeling—Report

*PAPER TOWEL DISPOSAL DEVICE*

Georgia-Pacific Corporation v. Von Drehle Corporation—U.S. District Court Eastern District of North Carolina Raleigh Division (2011)  
Consumer Expectations Research and Rebuttal—Trial Testimony

*WEB PAGE DESIGN*

ConsumerInfo.com, Inc. v. Jesse Wilms et al.—U.S. District Court Central District of California (2010)  
Likelihood of Confusion between web pages –Rebuttal

*COMPANY NAME*

The Gap Inc. and Gap Apparel Corporation v. G.A.P. Adventures, Inc.—U.S. District Court Southern District of New York (2010)  
Likelihood of Confusion and Rebuttal—Deposition

*APPAREL*

The North Face Apparel Corporation v. The South Butt, LLC—U.S. District Court Northern District of Georgia (2010)  
Dilution study and rebuttal

*AUTOMOTIVE PRODUCTS—HYDROPHOBIC WINDSHIELD APPLICATION*

Diamon-Fusion International, Inc. v. Crystal Fusion Technologies, Inc, et al.—U.S. District Court Central District of California (2009)  
Likelihood of Confusion—Report

*PAPER TOWEL DISPOSAL DEVICE*

Georgia Pacific Consumer Products LP v. Myers Supply, Inc.—U.S. District Court Western District of Arkansas; Hot Springs Division (2009)  
Consumer Expectations Study—Trial Testimony

*PHARMACEUTICALS*

Lannett Company, Inc. v. KV Pharmaceutical Company et al.—U.S. District Court District of Delaware (2009)  
Likelihood of Confusion research—Rebuttal and Deposition

*CIGARETTES*

Philip Morris USA Inc. v. All Of Our Butts, et al.—U.S. District Court Southern District of New York (2009)  
Consumer Perception Study; Rebuttal; and Deposition

*COMPUTER MONITORS*

Sharp Corporation v. Dell, Inc.—U.S. District Court District of New Jersey (2009)  
Likelihood of Confusion Research; Rebuttal; Trial Testimony

*DECORATIVE OBJECTS*

Margaret Furlong, et al. v. Pure Grace, et al.—U.S. District Court District of Oregon (2008)  
Likelihood of Confusion study—Report

*WEB PAGE DESIGN*

ConsumerInfo.com, Inc. v. Money Management International, Inc—U.S. District Court Central District of California, Western Division (2008)  
Likelihood of Confusion research —Deposition

*LAW FIRM ADVERTISING*

Simpson Strong-Tie Company, Inc. v. Stewart, Estes and Donnell—U.S. District Court Middle  
District of Tennessee Nashville Division  
Deceptive Advertising research and rebuttal—Deposition

*INDOOR TANNING SERVICES*

Hadis Nafar, et al. V. Hollywood Tanning Systems, Inc.—U.S. District Court District of New  
Jersey (2008)  
Class Action Suit—Consumer Survey Report

*BANKING*

Citizens Banking Corporation v. Citizens First Bancorp, et al.—U.S. District Court Southern  
District of Michigan Eastern Division (2007)  
Likelihood of Confusion Study; Rebuttal of Opponent's Study—Trial Testimony

*BANKING*

Citizens Banking Corporation v. Citizens Financial Group, Inc.—U.S. District Court of the  
Eastern District of Michigan Eastern Division (2007)  
Likelihood of Confusion study—Trial Testimony

*WEB PAGE DESIGN*

ConsumerInfo.com, Inc. v. Mighty Net, Inc.—U.S. District Court Central District of California  
(2007)  
Likelihood of Confusion between web pages—Research report

*CIGARETTES*

Trademark Holdings Corporation v. Premier Manufacturing, Inc.—U.S. District Court Western  
District of Kentucky Louisville Division (2007)  
Likelihood of Confusion research —Report

*MUSIC PRODUCTS*

Vista India, Inc. v. Raaga, LLC—U.S. District Court District of New Jersey (2007)  
Secondary Meaning Research—Trial Testimony

*POST-IT*

3M Company v. Rollit, LLC—U.S. District Court Northern District of California San Jose  
Division (2007)  
Likelihood of Confusion research; rebuttal—Deposition

*SUNBLOCK*

Robert Gaston et al. V. Schering Plough Corp.—Superior Court of the State of California The  
County of Los Angeles (2007)  
Coppertone Sunblock Labeling in conjunction with Class Certification—Deposition

*REAL ESTATE DEVELOPMENT*

Talisker Corporation v. Prime West Jordanelle, LLC. —U.S. District Court District of Utah  
Central Division (2007)  
Likelihood of Confusion research—Trial Testimony

*WINDOW PRODUCTS*

James and Lisa Camenson et al. V. Milgard Manufacturing Inc. et al.—Superior Court of the  
State of California County of Solano (2006)  
Class Action Suit in Support of Certification—Rebuttal Report

*RECORDS PRODUCTION*

Slip N' Slide Records Inc. TVT Records, LLC—U.S. District Court District of Florida (2006)  
Likelihood of Confusion (between two record covers)—Report

*PAPER TOWEL DISPOSAL DEVICE*

Georgia-Pacific Corporation v. American Paper Converting, Inc. Industrial Supply Company of Salem, Inc.—U.S. District Court District of Oregon (2005)  
Likelihood of Confusion research—Deposition

*CREDIT REPORTS*

LowerMyBills, Inc. v. NexTag, Inc.—U.S. District Court Central District of California Western Division (2005)  
Likelihood of Confusion research—Report

*PUBLIC PHONES*

Coastal Communication Service Inc. and Telebeam Telecommunications Corporation v. The City of New York—U.S. District Court Eastern District of New York (2005)  
Demand Estimation Study and Rebuttal—Deposition

*TRADEMARK REGISTRATION*

PerfumeBay.com, Inc. v. eBay Inc.—U.S. District Court Central District of California (2005)  
Likelihood of Confusion rebuttal—Trial Testimony

*FINANCIAL INSTITUTIONS*

Connex Credit Union v. Connexus Credit Union—U.S. District Court district of Connecticut (2004)  
Likelihood of Confusion—Opinion Report

*GYMS*

24 Hour Fitness USA, Inc. v. 24/7 Tribeca Fitness, LLC—U.S. District Court Southern District of New York (2004)  
Likelihood of Confusion rebuttal—Trial Testimony

*PHARMACEUTICALS*

PharmaNetics Inc. v. Aventis Pharmaceuticals, Inc.—U.S. District Court Eastern District of North Carolina (2004)  
Medical Messaging Impact Study Among Cardiologists—Report

## **EXHIBIT ‘E’**

**James G. Rice, Ph.D.  
Curriculum Vitae**

**Contact Information**

434-326-0148  
804-687-2465 (mobile)  
  
jrice@mechexpert.com

**Professional Summary**

Dr. Rice has over 35 years of technical and managerial experience in both industry and academia. He has a strong technical background in broad areas of mechanical engineering ranging from fluid mechanics and heat transfer to basic design. Dr. Rice's primary expertise is in computational methods and simulation in mechanical engineering. His mechanical engineering practice has focused in particular on the development and application of these methods to a diverse range of applications in industry, and has also used these methods in his litigation support activities.

Dr. Rice has extensive experience as an expert witness in patent litigation involving issues in Mechanical Engineering. Over the last ten years, he has provided litigation support in more than 50 cases including approximately 40 patent cases. This experience has included the preparation of numerous expert reports, depositions, and trial testimony for both plaintiff and defense attorneys. His litigation support activities have also included testing and analysis as required to support his opinions.

Dr. Rice is the author of over 30 technical publications and has consulted for over fifty companies. He has conducted over 200 seminars and short courses in the U.S., Europe, and the Orient, and has been an invited speaker at international engineering conferences.

**Expertise**

- |                         |                      |
|-------------------------|----------------------|
| • Computational Methods | • Combustion         |
| • Heat Transfer         | • Solid Mechanics    |
| • Thermodynamics        | • Mechanical Design  |
| • Thermal Sciences      | • CAE & CAD Software |
| • Fluid Dynamics        |                      |

**Education**

1978 Virginia Polytechnic Institute & State University, Blacksburg, VA  
1973 Virginia Polytechnic Institute & State University, Blacksburg, VA  
1972 Old Dominion University, Norfolk, VA

Ph.D.  
MSME  
BSME



**James G. Rice, Ph.D.  
Curriculum Vitae**

**Professional Experience**

**From:** 2001  
**To:** Present  
**Organization:** MechExpert  
**Title:** President  
**Summary:** Consulting and contract engineering activities in the areas of engineering analysis and design, patent litigation, patent development, and software development for both engineering and business applications.

**From:** 2000  
**To:** 2001  
**Organization:** Synetech Group, Charlottesville, VA.  
**Title:** Vice President & Chief Technical Officer  
**Summary:** Information technology company. Developed presidential campaign financial software including web based reporting for the 2000 presidential campaign. The company handled all campaign contributions nationwide. Extensive database development for both desktop and web based applications.

**From:** 1998  
**To:** 2000  
**Organization:** Virginia Commonwealth University, Richmond, VA  
**Title:** Adjunct Associate Professor, Department of Mechanical Engineering  
**Summary:** Teaching undergraduate courses in thermodynamics, computational methods, thermal systems design, and computer aided engineering, and computer programming. Instrumental in acquisition of CAE and CAD software for use in the development of the undergraduate program.

**From:** 1995  
**To:** 1998  
**Organization:** Altair Engineering, Dearborn, MI.  
**Title:** Engineering Manager  
**Summary:** Responsible for overall management of engineering service activities involving computational fluid mechanics, heat transfer, and injection molding. Responsibilities included business development as well as the technical management of projects.

**From:** 1992  
**To:** 1995  
**Organization:** Neural Research, Inc., Charlottesville, VA.  
**Title:** President & Founder  
**Summary:** Company was involved in the development and application of neural networks, wavelet based methods, and multi-resolution analysis methods. Applications of these methods were in both engineering and financial analysis.

**James G. Rice, Ph.D.  
Curriculum Vitae**

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**From:** 1987  
**To:** 1992  
**Organization:** Compuflo, Inc., Charlottesville, VA.  
**Title:** Co-Founder, Executive Vice President & Chief Technical Officer  
**Summary:** Chief Technical Officer and co-founder of the company as well as developer of the FLOTRAN finite element based computational fluid dynamics analysis software. Primary responsibilities included directing the engineering consulting and service activities, providing technical support to marketing and sales operations, and the overall technical direction for the company.

**From:** 1981  
**To:** 1987  
**Organization:** University of Virginia, Department of Mechanical and Aerospace Engineering, Charlottesville, VA.  
**Title:** Assistant Professor  
**Summary:** Teaching graduate and undergraduate courses primarily in the areas of heat transfer, fluid mechanics, thermodynamics, and combustion. Also taught courses in computer programming, computational methods, and computer aided engineering. Active participant in the Center for Computer Aided Engineering and taught extensively in the graduate extension program for industry.

**From:** 1977  
**To:** 1981  
**Organization:** Babcock & Wilcox Company Alliance Research Center, Alliance, OH.  
**Title:** Group Supervisor, 1979-1981, Senior Research Engineer, 1977-1979  
**Summary:** Group Supervisor for a software development group. The group developed computational methods for a variety of applications involving computational methods for fluid flow, heat transfer, and combustion in both the fossil and nuclear power industries.

**From:** 1974  
**To:** 1977  
**Organization:** Virginia Polytechnic Institute & State University  
**Title:** Instructor, Mechanical Engineering Department, Blacksburg, VA  
**Summary:** Primary responsibilities involved teaching undergraduate courses in the thermal sciences; fluid mechanics, heat transfer, and thermodynamics. Also taught the Mechanical Engineering Instrumentation and Measurements Laboratory.

**James G. Rice, Ph.D.  
Curriculum Vitae**

**Professional Affiliations, Achievements & Awards**

- Member, American Institute of Aeronautics and Astronautics
- Member, American Society of Mechanical Engineers
  - Vice-chairman, Regional Section, 1984-1985
  - Chairman, Regional Section, 1985-1987
- Member, IEEE, Institute of Electrical and Electronics Engineers
- Pi Tau Sigma
- Sigma Xi
- Best Paper, Fifth IEEE Semi-Conductor Thermal and Temperature Measurement Symposium, February 1989

**Clientele**

- |                                |                                     |
|--------------------------------|-------------------------------------|
| ▪ Advanced Micro Devices       | ▪ Hahn Loeser & Parks LLP           |
| ▪ Altair Engineering           | ▪ Haynes and Boone                  |
| ▪ AMP, Inc.                    | ▪ Kennedy Covington                 |
| ▪ Babcock & Wilcox Co.         | ▪ Kinne IP Group                    |
| ▪ Baker & McKenzie, LLP        | ▪ Kirkland & Ellis                  |
| ▪ Baker & Hostetler, LLP       | ▪ Knobbe Martens Olsen & Bear LLP   |
| ▪ Black and Decker             | ▪ Kobe Steel                        |
| ▪ Boeing Vertol                | ▪ Korean Inst. of Science and Tech. |
| ▪ Bond, Schoeneck & Kibng      | ▪ Kubicki Draper                    |
| ▪ Brown Raysman                | ▪ Loewinsohn Flegle Deary LLP       |
| ▪ Carr & Ferrell               | ▪ Macrosonics                       |
| ▪ CFD Research Corp.           | ▪ McKool Smith                      |
| ▪ Cray Research                | ▪ NASA Langley Research Center      |
| ▪ Christopher & Weisberg, P.A. | ▪ NASA Lewis Research Center        |
| ▪ Chung & Press, P.C.          | ▪ Nissan                            |
| ▪ Daimler Benz                 | ▪ Oliff & Berridge                  |
| ▪ Delphi                       | ▪ Pelerin Milnor                    |
| ▪ Doyle Berman Murdy, P.C.     | ▪ Phillips Electronics              |

**James G. Rice, Ph.D.  
Curriculum Vitae**

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| ▪ U.S. Department of Energy                                | ▪ Seagate Storage Technology           |
| ▪ Electric Power Research Inst.                            | ▪ Siemens Automotive                   |
| ▪ Factor & Lake  | ▪ Sonnenschein Nath and Rosenthal, LLP |
| ▪ Federal Mogul  | ▪ Storm LLP                            |
| ▪ Ford Motor Company                                       | ▪ Squire, Sanders & Dempsey LLP        |
| ▪ Fujitsu  | ▪ Toyota                               |
| ▪ General Motors   | ▪ Verizon                              |
| ▪ Hyundai Motor Company                                    | ▪ Westinghouse                         |
| ▪ Fellers, Snider, Blankenship<br>Bailey and Tipples, P.C. | ▪ Wilkie, Farr, & Gallagher            |
| ▪ Friedman, Suder & Cooke                                  | ▪ Whirlpool/KitchenAid                 |

**Publications**

1. Lange, Richard J., Rita J. Schnipke, and James G. Rice, "On Thermal Stratification and Migration in Pipe Flow," ASME Winter Annual Meeting, November 1990.
2. Schnipke, Rita J., James D. Hayword, and James G. Rice, "A Fluid Flow and Heat Transfer Analysis for Evaluating The effectiveness of an IC Package Heat Sink," Proceedings: Fifth IEEE Semiconductor Thermal and Temperature Measurement Symposium, Vol. 1, No. 1, February 1989
3. Jones, John H., Rita J. Schnipke, and James G. Rice, "FLOW-2D: A Two Dimensional Finite Element Free and Forced Convection PC Computer Code," ASME Paper No. WA/FE, ASME Winter Annual Meeting, November, 1988.
4. Bulsaro, A. B., M. K. Orazem, and James G. Rice, "The Influence of Axial Diffusion on Convective Heat and Mass Transfer in a Horizontal CVD Reactor," Journal of Crystal Growth, 1988.
5. Rice, James G., Rita J. Schnipke, D. Kim Cornelius, and Michael D. Normansell, "Navier-Stokes Computation of a Typical High-Lift Airfoil System," Science and Engineering on Cray Supercomputers, Proceedings of the Fourth International Symposium, Minneapolis, Minnesota, October, 1988.
6. Farnsworth, D. A., and James G. Rice, "Improved Solution Methods for Strongly Coupled Thermal/Hydraulic Analysis," Nuclear Engineering and Design, Vol. 102, 1987.
7. Schnipke, R. J. and James G. Rice, "Finite Element Analysis of Forced and Natural Convection Heat Transfer," International Journal for Numerical Methods in Engineering, Vol. 24, p. 117-128 (1987).
8. Rice, James G., and R. J. Schnipke, "An Equal Order Pressure Solution Method that Does Not Exhibit Spurious Pressure Modes," Computer Methods in Applied Mechanics and Engineering, No. 58 (1986), p. 135.
9. Schnipke, R. J., James G. Rice, and R. D. Flack, "Finite Element Analysis of Viscous Flow in a Vaned Radial Diffuser," International Journal of Heat and Fluid Flow, 1986
10. Brownell, R. B., R. D. Flack, M. C. Davis, and James G. Rice, "Finite Element Analysis of Viscous Flow in a Vaned Radial Diffuser," International Journal of Heat and Fluid Flow, 1986.

**James G. Rice, Ph.D.  
Curriculum Vitae**

11. Rosen, M. C., P. E. Allaire, and James G. Rice, "Penalty Function Finite Element Analysis of Steady Incompressible Flow in Rotating Coordinates," ASME Paper No. 84-GT-36, ASME International Gas Turbine Conference, Belgium, 1984
12. Hassan, Y. A., James G. Rice, and J. H. Kim, "A Stable Three Dimensional Streamline Upwind Scheme," Proceedings: 12th Southeastern Conference on Theoretical and applied Mechanics, Pine Mountain, Georgia, 1984
13. Hassan, Y. A., James G. Rice, and J. H. Kim, "Three Dimensional Transient and Steady State Calculations for Pressurized Thermal Shock Mixing Experiments," Multi-Dimensional Fluid Transients, ASME Book No. G00273, 1984.
14. Hassan, Y. A., James G. Rice, and J. H. Kim, "An Improved Multi-Dimensional Finite Difference Scheme for Predicting Horizontal Pipe Flow," Nuclear Technology, Vol. 65, No. 3 (1984), p. 454
15. Hassan, Y. A., James G. Rice, and J. H. Kim, "Reduction of Numerical Diffusion Errors in Thermal Mixing Problems," Transactions of the American Nuclear Society, Vol. 45, November 1983.
16. Hassan, Y. A., James G. Rice, and J. H. Kim, "Cause and Cure of Stability Problems in the Skew Upwind Differencing Scheme," Transactions of the American Nuclear Society, Vol. 45, November 1983.
17. Hassan, Y. A., James G. Rice, and J. H. Kim, "A New Scheme for Predicting Three Dimensional Temperatures in the Pressurized Thermal Shock Problem," Transactions of the American Nuclear Society, Vol. 46, June 1984.
18. Schnipke, R. J. and James G. Rice, "Application of a New finite Element Method to Convection Heat Transfer," Proceedings: Fourth International Conference on Numerical Methods in Thermal Problems, Pineridge Press, 1985
19. Rice, James G. and R. J. Schnipke, "An Efficient Finite Element Method for the Analysis of Viscous Fluid Flow," Proceedings: Fourth International Conference on Numerical Methods in Laminar and Turbulent Flows, Pineridge Press, 1985
20. Rice, James G. and R. J. Schnipke, "A Monotone Streamline Upwind Finite Element Method for Convection Dominated Flows," Computer Methods in Applied Mechanics and Engineering, No. 48 (1985), p. 313.
21. Allaire, P. E., M. C. Rosen, and James G. Rice, "Finite Element Analysis of Viscous Incompressible Flow with a Penalty Function Formulation," Finite Elements in Analysis and Design, Vol. 1, No. 1 (1985).
22. Schnipke, R. J. and James G. Rice, "Examination of a New Finite Element Method Applied to Convection Heat Transfer," Finite Elements in Analysis and Design, Vol. 1, No. 3 (1985).
23. Hassan, Y. A., James G. Rice, and J. H. Kim, "Predictions of Horizontal Stratified Pipe Flow," ASME Paper No. 83-WA/HT-41, ASME Winter Annual Meeting, Boston, MA, 1983.
24. Hassan, Y. A., James G. Rice, and J. H. Kim, "A Stable Mass-Flow Weighted Two Dimensional Skew Upwind Scheme," Numerical Heat Transfer, Vol. 6, No. 4 (1983), p. 153.
25. Rice, James G., Hassan, Y. A. and J. H. Kim, "Comparison of Measured and Predicted Thermal Mixing Tests Using Improved Finite Difference Techniques," Nuclear Engineering and Design, Vol. 76, No 2, 1983, p. 153.
26. Rice, James G., "Are Our Thermal Science Courses Up to Date," Proceedings of the 1982 ASEE Conference, Texas A&M University, 1982.
27. Sharma, M. P., James G. Rice, D. K. Cornelius, and D. R. Dougan, "Numerical Computation of Swirling Gas-Particle Flows: Application to Pulverized Coal Classifiers," Paper No. 80-WA/HT-31, ASME Winter Annual Meeting, July 1980.

**James G. Rice, Ph.D.  
Curriculum Vitae**

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28. Overjohn, W. A., S. V. Patankar, and James G. Rice, "THEDA: A Three Dimensional Analysis for Once-through Nuclear Steam Generators," Chemical Engineering Progress Symposium Series, 19th National Heat Transfer Conference, 1979.
  29. Rice, James G., "Experimental and Predicted Performance for the Combustion of a Low Heating Value Gas in a Swirl Burner," PhD Dissertation, Virginia Polytechnic Institute And State University, Blacksburg, Virginia, September, 1978.
  30. Rice, James G., J. R. Grant, and W. C. Thomas, "An Experimental Study of Combustion of a Low Heating Value Gas in a Swirl Burner," Combustion Institute, Central States Section, NASA Lewis Research Center, Cleveland, Ohio, March, 1977.
  31. Rice, James G., "The Modeling of Nitric Oxide Formation in a Swirl Burner with Flue Gas Recirculation," Masters Thesis, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, September, 1973.

**Deposition and Trial Testimony for Last Four Years**

Case	Cause No.	Venue	Service
IGB Automotive Ltd. and I.G. Bauherhin GmbH Petitioners, v Gentherm GmbH <sup>1</sup>	IPR2014-00666 IPR2014-00664 IPR2014-00667 IPR2014-00668 IPR2014-00661	USPTO, The Patent Trial And Appeal Board	Deposition Testimony
Rydex Technologies v. Hospira, Inc.	1:13-cv-00668	U. S. District Court District of Delaware	Deposition Testimony
Newton Research v. Shell	DC-07-13697	Dallas County Circuit court	Deposition Testimony
Romag v. Fossil & Macys	3:10cv01827	U. S. District Court District of Connecticut	Deposition and Trial Testimony
Idle Free Systems v. Bergstrom, Inc.	IPR2012-00027	USPTO, The Patent Trial And Appeal Board	Deposition Testimony
Baby Jogger, LLC v. Britax Child Safety, Inc.	2:12cv00452	U. S. District Court Eastern District of Virginia	Deposition Testimony
Graco, et al. v. PMC Global Inc., et al.	3:08cv01304	U. S. District Court District of New Jersey	Deposition Testimony
Aviva Sports, Inc v Fingerhut Direct Marketing, Inc., et al.	0:09cv01091	U. S. District Court District of Minnesota	Deposition Testimony
Ernest F. Lewis <sup>2</sup> v. AMP Bowling Centers, Inc., et al.	CL11-24	Circuit Court of the City of Virginia Beach	Deposition Testimony
DuPont v. MacDermid Printing Solutions, LLC	3:06cv03383	U. S. District Court District of New Jersey	Deposition Testimony
Apple v. Samsung Electronics, et al	Investigation No. 337-TA-796	International Trade Commission	Deposition Testimony
Kadant Johnson Inc. v. Louisiana Steam Equipment, et al.	10-cv-02869	U. S. District Court Eastern District of Louisiana	Hearing Testimony
Rollick Solar Systems Limited et al. v. Matrix Energy Inc., et al.	Court File No. T-1791-07	Federal Court of Canada	Trial Testimony
Dogleg Right Partners, LLP et al. v. Taylor Made Golf Company	2:07-Cv-533	U. S. District Court For The Eastern District Of Texas Marshall Division	Deposition Testimony
KCI et.al. v. Convatec, et al.	5:08cv00102	U. S. District Court, Middle District of North Carolina	Deposition Testimony
D & D Group PTY LTD, et al. v. Nationwide	3:08cv00236	U. S. District Court, Southern District of	Deposition Testimony

<sup>1</sup> Bold indicates my client

## **EXHIBIT ‘F’**



## 8. Curriculum Vitae of Robert Wallace

Rob Wallace Expert Witness: Brand identity

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917-860-0319

Rob@bestofbreedbranding.com

[www.RobWallaceExpert.com](http://www.RobWallaceExpert.com)

As the former managing partner of Wallace Church, Inc., one of the most recognized and accomplished brand identity strategy and design consultancies, I have more than thirty years of expertise in all aspects of branding strategy and design analysis for national and global brands. My core expertise is the ability to create and differentiate brand experiences that drive consumer awareness and purchase behavior.

Clients include Procter & Gamble, Coca-Cola, Unilever, Pfizer, Dell, Pepsico, Revlon, Target, The Home Depot, Johnson & Johnson, Bacardi, E&J Gallo, Mattel, Anheuser Busch, PNC Bank, Kroger, L'Oreal, Scotts/Miracle Gro and more than 40 national/global consumer product marketers of equal caliber.

### Areas of Expertise:

Trademark/Trade Dress	Marketing Strategy	Consumer Research
Package/Product Design	Licensing	Copyright Damages
Intellectual Property	Visual Brand identity	Consumer Research
Brand Communications	Advertising Claims	Planning/Analysis

### Industry Experience:

Food	Wellness	Retailer Brands
Beverage	Toys/Sporting Goods	Financial Services
Personal Care	Hard Goods	Technology Brands
OTC and Rx Drugs	Beer/Wine/Spirits	
Home Products	B to B	
HBA/Beauty Care	Apparel	

**Background:**

**Best of Breed Branding Consortium, LLC**

**June 2014 – Present**

**Managing Partner**

- Actively manage a consortium of branding communications consultancies.
- Provide strategic consulting on all branding issues including brand name development, brand identity, graphic and structural package design, trademark and copyright development, and integration across advertising and all other brand communications.

**Wallace Church, Inc.,**

**1985 – June 2014**

**Managing Partner, Strategy**

- Actively manage one of the world's most respected brand identity design consultancies.
- Provide strategic consulting on all branding issues including brand name development, brand identity, graphic and structural package design, trademark and copyright development, and integration across advertising and all other brand communications.

**Peter Cris Advertising, Inc., New York, NY**

**1984 – 1985**

**Vice President, Marketing**

- Provided both the strategic and creative force for this regional advertising agency.
- Acted as primary liaison between clients and creative department.

**Modular Marketing, Inc., New York, NY**

**1982 – 1984**

**Senior Account Manager**

- Managed select client relationships through all creative and strategic aspects of project management for this marketing communications consultancy.
- Designed and developed brand promotion programs, corporate communications and brand identity assignments.

**Grey Advertising, Inc., New York, NY**

**1981 – 1982**

**Senior Account Manager**

- Actively participated in one of the world's largest advertising agencies through the Market Horizons function, consulting with core clients on advertising and new brand communications opportunities.

**Education:**

MBA coursework, The New School, New York, NY      1981 – 1983  
BA, English, Gettysburg College, Gettysburg, PA      1977 – 1981

**Professional Activities:**

- Expert speaker on brand identity design at more than 40 marketing, design and research industry events across the US, UK, Europe, Latin America and Asia
- Author of numerous articles and published case histories on brand identity design in the Wall Street Journal, Forbes, Marketing Week, Design Management Journal, Package Design Magazine and numerous other publications,
- Co-Author “Really Good Package Design Explained,” Rockport Press, 09
- Lecturer on brand identity at Columbia Business School, Georgetown University, Seton Hall, University of Texas, School of Visual Arts Masters in Branding and other MBA programs of leading universities
- Board of Directors, Design Management Institute, 2010-Current
- Co-Chair of the Design Management Institute Design Value Project, 2012-Current
- Distinguished Faculty Member, Path to Purchase Institute, speaker at national conference for the last 8 years

**Professional Memberships:**

Board of Directors, The Design Management Institute,  
Co-Chair Design Value Project, The Design Management Institute  
Distinguished Faculty, Path to Purchase Institute  
American Marketing Association  
Color Marketing Group  
American Institute of Graphic Arts

## **9. Partial List of Prior Cases**

I have served as an expert witness and been deposed on brand identity related issues on twenty two prior occasions. In the last four years, I have been deposed on:

- Pom Wonderful, LLC v. Ocean Spray Cranberries, Inc., U.S. District Court Central District of California, 2010
- Pom Wonderful, LLC v. Welch's Foods, Inc., U.S. District Court Central District of California, 2010
- E. & J. Gallo Winery v. Trigo Corporation, U.S. District Court District of Puerto Rico, 2011
- Too Faced Cosmetics, Inc v. Almar Sales Co, Inc, et als, U.S. Court Central District of California, 2012
- FTC v. Ardagh Group S.A., U.S. Federal Court, District of Columbia, 2013
- Devi Snacks v House of Spices, Arbitration Hearing, Southern District of New York, 2014
- Simone Kelly Brown et al v. Oprah Winfrey, et al., U.S. District Court, Southern District of New York, 2014
- Woodbolt Distribution, LLC and General Nutrition Corporation v. Alteria Corportion , U.S. District Court, Southern District of New York, 2015

## **10. Partial List of Authored Books and Articles**

I have written a number of brand identity articles, contributed to branding texts, and have been interviewed by The Wall Street Journal, The New York Times, and more than a dozen branding

and marketing communications industry publications. I have spoken at more than 30 marketing communications and design industry events across North and South America, the UK, and Europe and Asia. I have lectured on brand identity at Columbia Business School, Georgetown, the University of Texas, and other leading universities. I have conducted webinar events with more than 1,600 participants on the topic of design process and design thinking.

I am on the Board of Directors of the Design Management Institute, the most prominent global design industry association, and I co-chair its Design Value Project. I am a Distinguished Faculty Member of the Path to Purchase Institute. Please see my current CV for a listing of these and other accomplishments.

I coauthored a book entitled "Really Good Packaging Explained", released in 2009 by Rockport Publishers. I was also a contributing author with Robin Landa and the book "Build Your Own Brand", Rockport, 2013. I also wrote the forward to Christopher Durham's book, "52 The My Private Brand Project", Folio28, 2014

In the past 15 years I have written the following articles:

- "The Tropicana Trouble and How It May Have Been Prevented", Package Digest, 2009
- "Blood, Sweat and Tiers, Building Optimal Brand Identity Architectures", GAIN, AIGA Journal of Business and Design, June 2008
- "Heinz Turns Iconic Authenticity Into Fresh Relevance", The Hub, September 2007
- "Design ROI Envisioned", Step Inside Design, July/August 2007
- "Be Smart Be Simple", Design Management Review, Spring 2006
- "Proving our Value: Measuring Package Design's Return on Investment", Design Management Journal, Summer 2001
- "The High Cost of Saving Money", Package Digest, Summer 2000
- "Icons, Your Brand's Visual Essence, Brandweek, Spring 2000

I have coauthored an article with Pamela De Cesare, former Associate Director of Package Communications, Kraft Foods, Inc., entitled "Amazing Pace, Shared Views on the Design Process", Design Management Journal, Spring 2000.

In the past several years I have posed more than two dozen articles and posts on Wallace Church's web site: <http://wallacechurch.tumblr.com/> these include but are not limited to:

- • "Quantifying Design's Value"
- • "Design RI Re-Envisioned",
- • "Cutting through the Sea of Sameness"
- • "Architecting a Brand Experience"
- • "The National Color" and more

I am the founder of the Linked In Group- "Relevant Disruption in Branding"

<https://www.linkedin.com/groups?home=&gid=7422931> where I have posted more than 10 articles including:

- • "Right Here, Right NOW!"
- • "Fashion Touchdown"
- • "Color is Key"
- • "Cool Customization"
- • "Relevance for Right Now"
- • "Shape Language"
- • "Visual Vampires"

#### **10. Fee Structure**

The fee for my consulting and developing expert witness reports in this case is \$400 per hour.

The fee for my attendance at depositions and trial in this case is \$500 per hour. My compensation is not dependent on the outcome of this litigation.

PLAINTIFF'S EXHIBIT LIST FOR  
PRE-TRIAL CONFERENCE  
SMART VENT V. CRAWL SPACE DOORS

**GENERAL/REGULATORY**

EXHIBIT	DESCRIPTION	BATES NO.
P-1	TB-1/08	SV 1183-1196
P-2	NFIP Underwriting Bulletin W-08086 dated October 23, 2008	SV 1449-1450
P-3	TB-1/93	SV 1149-1182
P-4	TB 3-93	SV 1262-1278
P-5	NFIP Underwriting Bulletin W-08001 dated January 8, 2008	SV 1421-1422
P-6	ASCE 24-05	SV 917-930
P-7	Flood Resistant Design and Construction, ASCE Standard 24-05 (2006 ©)	
P-8	Flood Resistant Design and Construction, ASCE Standard 24-14 (2015 ©)	
P-9	Acceptance Criteria for Automatic Foundation Flood Vents AC364, approved October 2006, Effective November 1, 2006	SV 1765-1778
P-10	ICC-ES Proposed revisions to the acceptance criteria for automatic flood vents, dated June 3, 2014	SV 1756-1762
P-11	Letter from ICC-ES regarding AC364-1006-R1, dated October 20, 2016	SV 1763-1767
P-12	Acceptance Criteria for Quality Documentation (AC10) - ICC-ES dated June 2014	SV 1748-1755
P-13	Acceptance Criteria for Quality Documentation (AC10) - ICC-ES dated January 2014	SV 36439-36446
P-14	Acceptance Criteria for Quality Documentation (AC10) - ICC-ES dated December 2012	SV 36531-36539
P-15	Acceptance Criteria for Quality Documentation (AC10) - ICC-ES dated June 2011	SV 36624-
P-16	NFIP Flood Insurance Manual, June 2014, Revised October 2014	Contained within SV 931-1746
P-17	Current NFIP Flood Insurance Manual located at <a href="https://www.fema.gov/media-library/assets/documents/162601">https://www.fema.gov/media-library/assets/documents/162601</a>	
P-18	NFIP Flood Insurance Manual, Lowest Floor Guide Section, 10/1/14	SV 36193-36280
P-19	NFIP Flood Insurance Manual, Lowest Floor Guide Section, 6/1/14	SV 36634-36719
P-20	NFIP Flood Insurance Manual, Lowest Floor Guide Section, 10/1/13	SV 36873-36958
P-21	NFIP Flood Insurance Manual, Lowest Floor Guide Section, 1/1/13	SV 36355-36438 SV 36789-36872
P-22	NFIP Flood Insurance Manual, Lowest Floor Guide Section, 10/1/12	SV 36447-36530

P-23	NFIP Flood Insurance Manual, Lowest Floor Guide Section, 5/1/12	SV 36540-36623
P-24	NFIP Flood Insurance Manual, Lowest Floor Guide Section, 10/1/10	SV 36281- 36350
P-25	NFIP Flood Insurance Manual, Lowest Floor Guide Section, 10/1/09	SV 37270-37272
P-26	NFIP Flood Insurance Manual, Lowest Floor Guide Section, 10/1/07	SV 36720-36778
P-27	FEMA Elevation Certificate and Instructions	SV 1133-1148
P-28	Insurance Agent's Lowest Floor Guide	SV 3010-3017

#### SMART VENT PUBLICATIONS

EXHIBIT	DESCRIPTION	BATES NO.
P-29	Non-Engineered Opening Guide Vol. 1/January 2015	SV 1780-1807
P-30	Smart Vent, Inc. Certification of Engineered Opening (July, 2007)	SV 1823-1839

#### ENGINEERS

##### REICHARD

EXHIBIT	DESCRIPTION	BATES NO.	DEPOSITION EXHIBIT
P-31	Video Deposition and transcript of Georg Reichard 6/11/2015		
P-32	Subpoena to Produce Docs – March 16, 2015		Reichard-1
P-33	Subpoena to Testify – April 30, 2015		Reichard-2
P-34	Reichard's response to subpoena - March 30, 2015		Reichard-3
P-35	Reichard's Curriculum Vitae		Reichard-4
P-36	2008 Certifications		Reichard-5
P-37	12/30/11 Email Reichard to Sykes	CSD 27620-27621	Reichard-6
P-38	Sykes email to Reichard with pictures of vents January 3, 2012		Reichard-7
P-39	Reichard's January 6, 2011 report to Texas Board of Professional Engineers on behalf of Herminio Cruz		Reichard-8
P-40	Consulting agreement between Reichard and Sykes		Reichard-9
P-41	Email Reichard to Sykes with certification document Reichard produces 4/26/2012		Reichard-10



P-42	Reichard to Sykes with invoice 6/10/12.		Reichard-11
P-43	Reichard email to Sykes with Certification Process-Cover letter, Reichard CV, Underlying calculations, xcel calculation sheet and cert of engineered flood openings		Reichard-12
P-44	Reichard email to Stacey Hart with Reichard docs attached. 10/11/13		Reichard-13
P-45	Invoices from Reichard to Haga Law firm/Sykes		Reichard-14
P-46	Photographs		Reichard-15
P-47	Booklet compiled by Sykes		Reichard-16
P-48	TB-1		Reichard -17
P-49	Email thread Reichard and Sykes May, 2012		Reichard-18
P-50	CSD Vent		Reichard - 19

**RICHARD BROAD**

**EXHIBIT DESCRIPTION**

**BATES NO. DEPOSITION  
EXHIBIT**

P-51	Deposition of Richard Broad, III, PE dated 1/18/16		
P-52	Notice of Deposition		1
P-53	Broad produced docs	BROAD 1 - 28	2
P-54	CSD produced docs including certs and emails		3
P-55	TB-1/08		4
P-56	AMCA Publication 511-10		5
P-57	Docs regarding Dr. Reichard		6
P-58	Flood Vent		7

**GECI**

**EXHIBIT DESCRIPTION**

**BATES NO. DEP/ECF #**

P-59	Deposition of Steve A. Geci, P.E. dated 6/17/15		
P-60	Subpoena to Produce Docs - February 17, 2015		G-1
P-61	Subpoena to Testify - May 1, 2015		G-2
P-62	Sykes email to Geci		G-3
P-63	Geci invoice dated 6/30/10		G-4
P-64	Geci's 2010 Florida and Alabama Certs		G-5
P-65	TB-1/03 Flood vent worksheet		G-6
P-66	TB-1 93		G-7

P-67	TB-1 98		G-8
P-68	ASCE/SEI 24-05		G-9
P-69	Email Fitzpatrick to Geci dated 8/1/11		G-10
P-70	FEMA Jhun de la Cruz October 23, 2008 memo		G-11
P-71	Geci invoice dated 9/14/10		G-12
P-72	7/18/11 Sunvent letter to Geci		G-13
P-73	7/26/11 letter from Florida Board of Engineers to Geci		G-14
P-74	Letter from Sykes to engineers dated 7/26/11.		G-15
P-75	Email Sykes to engineers dated 8/8/11		G-16
P-76	8/9/11 Emails Sykes to engineers		G-17
P-77	8/9/11 Geci's response to Florida Board		G-18
P-78	8/10/11 Discussions between Sykes and engineers		G-19
P-79	9/12/11 Fitzpatrick to Sykes		G-20
P-80	Alabama Board letter to Geci dated 9/23/11		G-21
P-81	10/25/11 Sykes to Fitzpatrick		G-22
P-82	Sykes to Fitzpatrick email dated 10/25/11		G-23
P-83	11/28/11 – Letter from Florida Board of Engineers to Geci		G-24
P-84	4/7/12 Email from Sykes to engineers		G-25
P-85	Sykes email to engineers dated 4/7/12		G-26
P-86	6/27/12 Sykes email to engineers		G-27
P-87	Geci email sending new certs for Florida and Alabama to Sykes		G-28
P-88	New certs (2012) for Alabama and Florida		G-29
P-89	CSD Flood vent		G-30

FITZPATRICK  
EXHIBIT DESCRIPTION

BATES NO. DEPOSITION  
EXHIBIT

P-90	Deposition transcript of David W. Fitzpatrick dated 6/17/15		
P-91	Subpoena to Produce Docs – February 19, 2015		F-1
P-92	Subpoena to Testify – May 1, 2015		F-2
P-93	Geci 8/19/10 email to Fitzpatrick		F-3
P-94	Fitzpatrick's website page		F-4
P-95	Geci email to Fitzpatrick dated 8/19/10		F-5

P-96	Invoice from Geci to Fitzpatrick		F-6
P-97	9/13/10 Mississippi cert		F-7
P-98	TB-1 08		F-8
P-99	ASCE/SEI 24-08		F-9
P-100	FEMA Jhun de la Cruz October 23, 2008 memo		F-10
P-101	Fitzpatrick email to Geci dated 7/22/2011		F-11
P-102	Geci and Fitzpatrick emails dated 7/18 - 7/25/11		F-12
P-103	Mississippi Board letter to Fitzpatrick 8/8/11		F-13
P-104	Emails between Geci and Fitzpatrick dated 7/25/11		F-14
P-105	Email Sykes to engineers dated 8/8/11		F-15
P-106	Fitzpatrick email to Geci dated 8/30/2011		F-16
P-107	Fitzpatrick's response to Mississippi Board dated 9/12/11		F-17
P-108	Fitzpatrick's email to Geci dated 9/12/11		F-18
P-109	Sunvent letter to Mississippi Board dated 9/13/11 with copy of Architectural Testing's test of CSD vent		F-19
P-110	Sykes letter to engineers dated 10/24/11		F-20
P-111	Fitzpatrick to Sykes		F-21
P-112	Fitzpatrick's additional response to Mississippi Board dated 11/10/11		F-22
P-113	2/2/12 Email from Jane Phillips at Mississippi Board of Licensure to Fitzpatrick		F-23
P-114	Sykes email to engineers dated 4/7/12		F-24
P-115	Sykes email to engineers dated 4/7/12		F-25
P-116	Sykes letter to engineers dated 6/27/12		F-26
P-117	Geci's email to Sykes dated 7/26/12		F-27
P-118	Sykes' email to Fitzpatrick dated 10/25/12		F-28
P-119	Reichard's booklet that was sent to engineers		F-29
P-120	2012 Certification from Fitzpatrick to Sykes		F-30
P-121	Crawl Space Door vent retained by counsel		F-31

**SWIDERSKI**

**EXHIBIT DESCRIPTION**

**BATES NO. DEPOSITION  
EXHIBIT**

P-122	Deposition transcript of William S. Swiderski, P.E., dated 1/28/16		
P-123	Subpoena to Produce Docs - February 19, 2015		1
P-124	7/18/11 complaint from Sunvent to NJ Board of Professional Engineers	Swiderski 45	2

P-125	5/24/11 Cert signed by Swiderski	Swiderski 48	2
P-126	8/9/11 Geci response to Florida Board of Prof Engineers	Swiderski 74	2
P-127	8/9/11 Email Larry McClanahan to Sykes	Swiderski 78	2
P-128	Spreadsheet Swiderski developed	Swiderski 129	2
P-129	7/17/12 Letter from Sykes to engineers	Swiderski 134	2
P-130	Swiderski's revised cert		3

GRIFFIN

EXHIBIT DESCRIPTION

BATES NO. DEPOSITION  
EXHIBIT

P-131	Deposition Transcript – Charles D. Griffin dated 1/22/16		
P-132	Notice of Deposition		1
P-133	Certification signed by Griffin		2
P-134	Emails between Griffin and CSD	CSD 19284-85, 19358-62, 19395-96, 61-62	4
P-135	TB1-08, AMCA Publication 511-10, Calculation sheet, Emails between Charles Griffin and William Sykes, Lowest Floor Guide		5-9

HAMILTON

EXHIBIT DESCRIPTION

BATES NO. DEP/ECF #

P-136	Deposition Transcript – Delmer Hamilton dated 1/20/16		
P-137	2 certifications – 2011 and 2012		1
P-138	TB1-08		2
P-139	AMCA Publication 511-10		3
P-140	Lowest Floor Guide		4

LONEY

EXHIBIT DESCRIPTION

BATES NO. DEPOSITION  
EXHIBIT

P-141	Deposition Transcript – Christopher N. Loney dated 1/13/16		
P-142	Subpoena to Testify to Loney 12/23/15		1

P-143		Subpoena to Testify to Loney 4/30/15	2
P-144		Subpoena to Produce Docs to Loney 2/19/15 and responsive docs	3
P-145		Cert signed by Loney	4
P-146		Cert signed by Loney	5
P-147		Calculation sheet	6

RANNEY

EXHIBIT DESCRIPTION

BATES NO. DEPOSITION  
EXHIBIT

P-148	Deposition Transcript – Harry Ranney dated 1/15/16		
P-149	Subpoena to Produce Docs to Ranney		1
P-150	Subpoena to Testify to Ranney		2
P-151	Emails between Anthony DiMarino		3
P-152	Certifications for Colorado signed by Hamilton		4
P-153	Emails between Sykes and Ranney	CSD 13839-840; CSD 13882-883; CSD 13923-924; CSD 13928-929; CSD 13932-937; CSD 8490-8492	5
P-154	TB1 – 08		6
P-155	AMCA 511-10		7
P-156	Lowest Floor Guide		8
P-157	Reichard's cover letter to engineers		9
P-158	Reichard's underlying calculations		10
P-159	Email from Sykes to engineers		11
P-160	8 x 16 flood vent with packaging		12

CENAC

EXHIBIT DESCRIPTION

BATES NO. DEPOSITION  
EXHIBIT

P-161	Deposition Transcript – Michael A. Cenac, P.E. dated 1/12/16		
P-162	Cenac produced documents	CENAC 1 - 198	1
P-163			2
P-164	AMCA Publication 511-10		3
P-165	TB-1/08		4
P-166	Lowest Floor Guide	SWIDERSKI 1 - 31	5
P-167	FEMA Jhun de la Cruz NFIP underwriting bulletin W-08086		6
P-168	Invoice prepared by Cenac		7

CRUZ

EXHIBIT DESCRIPTION

BATES NO. DEPOSITION  
EXHIBIT

P-169	Deposition Transcript – Herminio Cruz, P.E. dated 2/2/16		
P-170	Notice of Deposition		1
P-171	Cruz produced docs		2
P-172	CSD produced docs including certs and emails		3
P-173	Dr. Reichard 1/6/11 - Certification of Flood Vents.		4
P-174	TB-1/08		5
P-175	AMCA Publication 511-10		6
P-176	Lowest Floor Guide		7
P-177	CSD Vent		8

O'CONNELL

EXHIBIT DESCRIPTION

BATES NO. DEPOSITION  
EXHIBIT

P-178	Deposition Transcript – Tod O'Connell dated 1/21/16		
P-179	Docs produced by O'Connell – includes subpoena to produce		1
P-180	TB-1		2
P-181	AMCA 511-10		3
P-182	Lowest Floor Guide		4
P-183	Calculation Sheet		5
P-184	Reichard 1/16/12 Review of Cert of Engineered Flood Openings		6

**CRAWL SPACE DOORS DEPOSITIONS**  
William Sykes – 30(b)(6)

EXHIBIT	DESCRIPTION	BATES NO.	DEPOSITION EXHIBIT
P-185	Deposition Transcript – William G. Sykes dated 6/24/15		
P-186	Certification – for Virginia signed by Christopher Loney		CSD-1
P-187	Certification for North Carolina signed by Frederick House and certification for Virginia signed by Richard Broad dated 2/25/09		CSD-2
P-188	30(B)(6) Deposition Notice to CSD dated 5/8/15		CSD-3
P-189	Exhibit A to SV complaint – TB-1/2008		CSD-4
P-190	Exhibit B to SV complaint – FEMA W-08086 Jhun de law Cruz memo of October 23, 2008		CSD-5
P-191	Exhibit E to SV complaint – CSD flyer		CSD-6
P-192	Certifications	CSD 35343, 2718, 15052, 35346, 34752, 35527, 12220, 35529, 2857, 5620, 5621, 2973, 35535, 36125	CSD-7
P-193	Emails between Sykes and John Ingargiola 5/14/09, 7/26/09, 10/8/09		CSD-8
P-194	Harbor Supply Inc. letter, Clifford Oliver @ FEMA letter to SV dated 9/12/05	CSD 610-614	CSD-9
P-195	CSD Business Plan	CSD 36310-36313	CSD-10
P-196	Physical Vent		CSD-11
P-197	Physical Vent		CSD-12
P-198	Certification from Michael Cenac for Louisiana dated 2/2/2011		CSD-13
P-199	Email Sykes to Reichard with NFIP 2008 and 2011 manuals.	CSD 4059	CSD-14
P-200	Crawl space website		CSD-15

Chris Qualtieri

EXHIBIT DESCRIPTION

BATES NO. DEPOSITION  
EXHIBIT

P-201	Deposition Transcript – Christopher Qualtieri dated 6/24/15		
P-202	Deposition Notice dated 5/8/15		Q-1
P-203	CSD Responses to SV first set of roggs		Q-2
P-204	Certification of Richard Broad	CSD 5104-5107	Q-3
P-205	Email from Sykes to Chris dated 3/23/11	CSD 17787-17793	Q-4
P-206	Email Geci to Sykes dated 7/25/11 and then Sykes to Chris dated 7/25/11	CSD 8982	Q-5
P-207	Chris email to Sykes dated 8/1/2011	CSD 13963-13964	Q-6
P-208	Fitzpatrick email to Sykes dated 9/6/	CSD 35175-35178	Q-7
P-209	Email Sykes to Rich Waalkes @ FEMA dated 11/14/11	CSD 29341-29348	Q-8
P-210	Email Gail Loftin to CSD on 12/20/11	CSD 29365	Q-9
P-211	Dr. Reichard's report dated 1/6/11 to Texas Board of Engineers for Herminio Cruz	CSD 8641-8656	Q-10
P-212	Email from Sykes to Chris dated 1/8/12	CSD 35189-35190	Q-11
P-213	Letter from Sykes to Nancy Dunham @ Association of State Floodplain Managers	CSD 8047-8060	Q-12
P-214	Email from Charity Gavaza to Chris on 2/22/12	CSD 6819	Q-13
P-215	Emails between Sykes and Chris on 6/9/12	CSD 4208- 4209	Q-14
P-216	Email from Mary Bess to CSD dated 7/23/13	CSD 16300, 33793-33794	Q-15
P-217	Emails between Sykes and Chris	CSD 16993-16994	Q-16
P-218	Email from Chris to Joan Hillidy dated 12/4/12	CSD 31840-31841	Q-17
P-219	Email from Payson Burnett to Chris dated 11/18/13	CSD 27479-27485	Q-18
P-220	Email Chris to Sykes	CSD 36297	Q-19
P-221	Email Christ to Sykes	CSD 36291	Q-20
P-222	Email from CS Schoenig	CSD 35743	Q-21



P-223	Email from Chris to John Drewry or Dewry?	CSD 34084-34085	Q-22
P-224	Email Chris to Gene Dicks dated 7/25/14	CSD 35117	Q-23
P-225	Emails with Darla Martin at State Farm	CSD 35066-35073	Q-24
P-226	CSD flyer		Q-25
P-227	Article: <i>How to Protect Your Home and Save Money with FEMA Complaint Flood Vents.</i>	CSD 35806-35809	Q-26
P-228	TB-1		Q-27
P-229	Cert signed by Steve Geci dated 10/30/12		Q-28

Exhibits to Smart Vent Depositions (Michael Graham and Tom Little)

EXHIBIT DESCRIPTION

BATES NO. DEPOSITION  
EXHIBIT

P-230	Notice of Deposition dated 1/18/16		1
P-231	Notice of Deposition dated 4/15/15		2
P-232	SV v. CSD Complaint dated 9/24/13		3
P-233	SV's Answers and Objections to First Set of Interrogatories dated 5/30/14		4
P-234	SV's Answers and Objections to Second Set of Interrogatories dated 4/8/15		5
P-235	Non-engineered opening guide – Vol. 1 January 2015		6
P-236	Non-engineered opening guide – Vol. 2 November 2015		7
P-237	Tom Little email to SV reps dated 8/9/12	SV-31239	8
P-238	Email dated 1/7/16 from SV to <a href="mailto:jkdavis@atlanticsurvey.com">jkdavis@atlanticsurvey.com</a>		9
P-239	Email 8/2/11 from Lori @ Sunvent to Mike Graham	SV-31088	10
P-240	Email 10/8/2009 from John Ingargiola to Billy Sykes	CSD 9817	11
P-241	Portions of Princeton Hydro report dated 6/30/15		12
P-242	One page excerpt, Page 7, Opinion 7 and Opinion 8		13
P-243	Memorandum John Ingargiola to Rebecaa Quinn dated 8/6/09, with attachments	SV-0035433 through 0035436	14
P-244	E-mails dated 12/2/13 from Michael Graham to Rebecca Quinn	SV-0027880 through 0027881	15

P-245	E-mail string, top one dated 11/27/13 Michael Graham and Bill Coulbourne	SV-0027882 through 0027883	16
P-246	Smart Vent Mark Information	SV-0036118 through 0036192	17
P-247	Computer printout "Crawl Space Doors" - keywords	SV-0035836 through 0035850	18
P-248	E-mail string, top one dated 7/7/11 between Brian Shaw and Bryan Fryklund at Divided Sky Design	SV-0018634 through 0018636	19
P-249	Script of Original Video, Smart Vent Garage Vents-Floor Protection Uploaded by: ReallyGoodStuff January 6, 2009 (Nick Nunes)		20
P-250	Letter dated 1/8/13 to Anthony J. DiMarino, Esq. from Scott L. Reichle, Esq.	SV-0033507 through 0033508	21
P-251	ICC-ES Report, SmartVent Products, Inc. Reissued 02/2015		22
P-252	E-mail string, top one dated 2/1/11 between Brian Shaw and Elizabeth Riegler	SV-0015895 through 0015897	23
P-253	Crawl Space Door System, Inc., d/b/a Crawl Space Door Systems, Inc.'s Amended Answer, Affirmative Defenses and Counterclaims dated 9/3/14		24
P-254	Answer to Defendant's Counterclaims dated 10/1/14		25
P-255	Photo of Smart Vent box saying "FEMA accepted"		26
P-256	E-mails dated 11/24/03 between Michael Graham and Rebecca Quinn	SV-0033782	27
P-257	Clifford Oliver - FEMA letter to Michael Graham dated 11/21/03	SV-0009857 through 0009858	28
P-258	Letter dated 6/16/04 to Clifford Oliver – FEMA from Michael J. Graham	SV-0033224 through 0033225	29
P-259	E-mail dated 2/24/05 between Rebecca Quinn and Michael Graham	SV-0033264	30
P-260	E-mail dated 6/23/08 John Ingargiola to Michael Graham	SV-0034139	31

P-261	First Draft, Unedited 4/7/11, "Smart Vents Prevent Foundation Flood Damage and Lower Flood Insurance Costs"	SV-0031145 through 0031147	32
P-262	E-mail dated 11/21/03 from Mike Graham to Marty Montgomery	SV-0034149	33
P-263	Letter dated 7/7/08 to Michael Graham from John F. Bolton, Esq. (Nixon Peabody)	SV-0034136 through 0034139	34
P-264	United States Patent US 6,287,050 B1	SV-0000114 through 0000127	35
P-265	United States Patent US 6,692,187 B2	SV-0000406 through 0000430	36
P-266	United States Patent US 6,485,231 B2	SV-0000261 through 0000279	37
P-267	USPTO Patent Full-Text And Image Database Patent 5,944,445		38
P-268	Expert Report of Dana Trexler Smith, CPA/CFF (Eisner Amper) June 30, 2015		39
P-269	Plaintiffs Objections and Responses to Defendant's First Requests for Admissions dated 4/8/15		40
P-270	Declaration of Thomas Little attached to expert report, dated 6/30/2015		41
P-271	Documentation of Unacceptable Flood Openings, Measures and Certifications	SV-0031934 through 0031958	42
P-272	E-mail dated 5/6/2014 from Tom Little to Don Jernigan	SV-0031933	43
P-273	E-mail string, 5/29/13, with attachments Tom Little and Harry Alexander	SV-0029236 through 0029242	44
P-274	Smart Vent marketing "FEMA Study Reveals how SMART VENT Saved Homes of Sea Bright, NJ During Hurricane Sandy"	SV-0018130 through 0018132	45
P-275	E-mail string, top one dated 4/19/13 between Mike Graham and John Ingargiola	SV-0030740 through 0030744	46

P-276	E-mail string, top one dated 4/19/2013 Mike Graham to Brian Shaw and Tom Little	SV-0030745 through 0030748	47
P-277	E-mail string, top one dated 7/11/2014	[SV-0032889 through 0032890	48

Dep of Lori Malitsky. Sunvent

EXHIBIT DESCRIPTION

BATES NO. DEPOSITION  
EXHIBIT

P-278	Deposition Transcript –Lori Malitsky dated 6/17/15		
P-279	Deposition Subpoena		1
P-280	Deposition Subpoena		2
P-281	Plaintiff's Objections and answers to Defendant's First set of interrogatories		3
P-282	Letter dated 7/18/11		4
P-283	Letter dated 7/18/11		5
P-284	Letter dated 7/18/11		6
P-285	Letter dated 7/18/11		7
P-286	Letter dated 7/18/11		8
P-287	Letter dated 7/18/11		9
P-288	Letter dated 7/18/11		10
P-289	Letter dated 7/18/11		11
P-290	Letter dated 2/24/12		12
P-291	Letter dated 11/28/11		13
P-292	Letter dated 3/21/12		14
P-293	Letter dated 11/13/12		15
P-294	Letter dated 12/20/11		16
P-295	Letter dated 11/7/11		17
P-296	Letter dated 11/10/11		18
P-297	Letter dated 11/22/11		19
P-298	Letter dated 11/8/11		20
P-299	ICC Evaluation Report		21

P-300	Draft complaint and jury demand		22
P-301	Screen shot of website		23
P-302	E-mail exchange		24
P-303	E-mail exchange		25
P-304	Cardboard box with contents		26
P-305	Vent		27
P-306	Product literature		28
P-307	Copy of Photograph		29
P-308	E-mail exchange		
P-309	E-mail		

## DISCOVERY

EXHIBIT	DESCRIPTION	DATE	
P-310	CSD's Answers and Objections to First Set of Interrogatories	5/30/14	
P-311	CSD's Responses and Objections to First RFPD	5/30/14	
P-312	CSD's Responses and Objections to Second RFPD	3/20/15	
P-313	CSD's Responses and Objections to Second Roggs	3/20/15	
P-314	CSD's Response to Third RFPD	5/20/15	

[illegible]

P-327	Email from Crawl Space Doors to customer	CSD00005248-00005249	
P-334	Cenac Full Transcript		
P-335	Email explaining CSD calculations	CSD00005386-00005389	
P-336	Email from Sykes to Chris Beeler	CSD00005874-00005876	
P-337	Email between Sykes and Reichard re: certifications	CSD00035179-00035186	
P-338	Email Sykes to Geci attaching certification	CSD00004728	
P-339	Email from Chris Q. to Sykes re: their web designer	CSD00005184	
P-340	Email from Sykes to ASCE	CSD00006096	
P-341	Email from CSD to Greg Lucier at NCSU	CSD00006107	
P-342	Customer to CSD asking about their flood vents	CSD00006203	
P-343	Email exchange between Chris Q. and Sykes	CSD00006952-6955	
P-344	Email with Sykes re: his certifications	CSD 00007041	
P-345	Homeowner to Sykes re: his calculations	CSD00007843-7847	
P-346	Shaw to Ohio official explaining FEMA guidelines	SV-0011858	
P-347	Shaw to Waterson explaining more FEMA requirements	SV-0016190-0016191	
P-348	Keith from Hilmar Lumber explaining that a customer bought a vent other than a smartvent	SV-0018647-0008648	
P-349	Waterson explaining the difference between SV vents and competitor's vents	SV-0030378-0030379	
P-350	CSD website screenshot that lists their certifications	SV-037283	
P-351	Sykes stating that homeowners save money on their flood insurance because of CSD's vents	CSD00005154-00005155	
P-352	Email from Sykes listing the net-free air coverage per vent	CSD00005258-0005260	
P-353	Sykes explaining discrepancy in net free air calculations	CSD0005366-5368 5386-5389	
P-354	Sykes comparing his vents to Smart Vents	CSD00005430-5431	
P-355	Sykes explaining not to use the cover that comes with the vent	CSD00003719-00003720	
P-356	Sykes discussing redesigning their flood vent	CSD00003961-00003962	

P-357	Sykes stating that people buy smart vents when "they want to seal or close up their crawlspace"	CSD00004003	
P-358	Sykes explaining to Reichard his interpretation of the NFIP manual	CSD00004059	
P-359	Sykes to Chris Q. re: explaining calculations to engineers	CSD00004204-4205	
P-360	Sykes telling a customer that their "FEMA Engineered Flood certification" is attached	CSD00005134-5139	
P-361	A customer telling Sykes he is choosing CSD over Smart Vent	CSD 5680-5681	
P-362	Smart Vent is SMART!	CSD00005938	
P-363	Sykes explaining the Sunvent claims to the engineers	CSD00006092-00006093	
P-364	Customer telling Sykes he wants to buy CSDs over Smart Vents	CSD00007830-00007832	
P-365	Chris Q. explaining the signing of the certification to a customer	CSD00035066-000035073	
P-381	Sykes to Gilpin email	CSDDG 1	Digerati docs
P-382	Simandle Opinion	CSDDG 2	
P-383	Simandle Order and Permanent Injunction	CSDDG 21	
P-384	Sales Invoices	CSDDG 23	
P-385	Sales Invoices	CSDDG 25	
P-386	SV Certification of Engineered Flood Openings	SV-0001823-1839	

[illegible]



P-436	Email from Quinn to Ingargiola referring to the AMCA standard	SV-0035433-0035436	AMCA Standard 500
P-437	National Evaluation Report NER-624	SV-0037251-0037253	
P-438	ICC ES Legacy Report	SV-0037254-0037255	
P-439	ICC ES Legacy Report	SV-0037256-0037257	
P-440	ICC ES Legacy Report	SV-0037258-0037259	
P-441	ICC ES Evaluation	SV-0037260-0037261	
P-442	ICC ES Flood Flaps	SV-0037262-0037264	
P-443	ICC ES Flood Flaps- Supplement	SV-0037265-0037269	
P-444	Lowest Floor Guide	SV-0037270-0037272	
P-445	Colbourne to Graham re: suggested ASCE 24 commentary language for stacker	SV-0004897-0004899	
P-446	Highlights of ASCE 24-05	SV-0000917-0000930	
P-447	Email exchange between Little, Graham and Shaw re: CSD's link to Smartvent.com on their website	SV-0028209-0028211	
P-448	ASCE Standard 24-05	CSD00000190- CSD00000196	
P-449	Chapter 2 of ASCE	SV-0000451-0000452	
P-450	Graham to Oliver 6/16/04	SV-0033224-0033226	
P-451	Oliver to Graham 11/21/03	SV-0034592-0034593	

P-452	Exchange among Oliver, Graham, Grimm, Ingargiola and Beaton re: issues discussed at the ASFPM conference	SV-0037250	
P-453	CSD advertising optimizing tags	CSD0000362-0000372	
P-454	Email from Ingargiola to Sykes re: obtaining an ICC-ES evaluation	CSD00007052-00007053	
P-455	SV Profit and Loss P&L financial 9-12 2010	SV-0036959-0036963	
P-456	SV Profit and Loss P&L financial 9-12 2011	SV-0036964-0036972	
P-457	SV Profit and Loss P&L financial 9-12 2-13	SV-0036973-0036977	
P-458	SV Profit and Loss P&L financial 9-12 2014	SV-0036978-0036982	
P-459	SV Profit and Loss P&L financial 9-12 2015	SV-0036983-0036982	
P-460	Sales by Customer Summary financial 2010	SV-0036988-0036993	
P-461	Profit and loss financial 2014	SV-0036994-0036998	
P-462	Sales by item summary 2014	SV-0036999-0037001	
P-463	SV Profit and Loss P&L financial April 2015	SV-0037002-0037004	
P-464	Sales by item summary April 2015	SV-0037005-0037006	
P-465	SV Profit and Loss financial Dec 2014	SV-0037007-0037011	
P-466	Sales by item summary Dec 2014	SV-0037012-0037013	
P-467	SV Profit and Loss financial Feb 2015	SV-0037014-0037017	
P-468	Sales by item summary Feb 2015	SV-0037018-0037019	
P-469	SV Profit and Loss financial Jan 2015	SV-0037020-0037023	
P-470	Sales by item summary Jan 2015	SV-0037024-0037025	
P-471	SV Profit and Loss financial March 2015	SV-0037026-0037028	
P-472	Sales by item summary March 2015	SV-0037029-0037030	
P-473	SV Profit and Loss financial Nov 2014	SV-0037031-0037034	
P-474	Sales by item summary Nov 2014	SV-0037035-0037036	
P-475	SV Profit and Loss financial Oct 2014	SV-0037037-0037013	
P-476	Sales by item summary Oct 2014	SV-0037014-0037042	
P-477	SV Profit and Loss financial Dec 2010	SV-0037043-0037046	
P-478	Transaction Detail by Account financial 1/1-6/29/15	SV-0037047-0037052	
P-479	Stacey Hart Attempted proof of service 1/11/16	SV-0037053	
P-480	SV Profit and Loss financial 9-12 2010	SV-0037054-0037058	
P-481	Sales by Customer Detail financial 2007	SV-0037059-0037062	
P-482	Sales by Customer Detail financial 2008	SV-0037063-0037067	
P-483	Sales by Customer Detail financial 2009	SV-0037068-0037073	
P-484	Sales by Customer Detail financial 2010	SV-0037074-0037079	

P-485	SV Profit and Loss financial 2010	SV-0037080-0037084	
P-486	SV Profit and Loss financial 2011	SV-0037085-0047089	
P-487	SV Profit and Loss financial 2012	SV-0037090-0037093	
P-488	SV Profit and Loss financial 2013	SV-0037094-0037098	
P-489	SV Profit and Loss financial 2014	SV-0037099	
P-490	Sales by Item Summary 2014	SV-0037104-0037109	
P-491	SV Profit and Loss financial 2014	SV-0037110-0037114	
P-492	SV Profit and Loss financial 2015	SV-0037115-0037119	
P-493	Profit and Loss 2000	SV-0037120-0037121	
P-494	Profit and Loss 2001	SV-0037122	
P-495	Balance Sheet 2001	SV-0037123	
P-496	Profit and Loss 2002	SV-0037124	
P-497	Balance Sheet 2002	SV-0037125	
P-498	Profit and Loss 2003	SV-0037126	
P-499	Balance Sheet 2003	SV-0037127	
P-500	Profit and Loss 2004	SV-0037128	
P-501	Balance Sheet 2004	SV-0037129	
P-502	Profit and Loss 2005	SV-0037130-0037129	
P-503	Balance Sheet 2005	SV-0037133-0037134	
P-504	Profit and Loss 2006	SV-0037135-0037137	
P-505	Balance Sheet 2006	SV-0037138-0037139	
P-506	Profit and Loss 2007	SV-0037140-0037142	
P-507	Balance Sheet 2007	SV-0037143-0037144	
P-508	Profit and Loss 2008	SV-0037145-0037147	
P-509	Balance Sheet 2008	SV-0037148-0037149	
P-510	Profit and Loss 2009	SV-0037150-0037152	
P-511	Balance Sheet 2009	SV-0037153-0037154	
P-512	Profit and Loss 2010	SV-0037155-0037157	
P-513	Balance Sheet 2010	SV-0037158-0037159	
P-514	Profit and Loss 2005	SV-0037160-0037161	
P-515	Profit and Loss 2006	SV-0037162-0037163	
P-516	Balance Sheet 2006	SV-0037164-0037165	
P-517	Profit and Loss 200	SV-0037166-0037168	
P-518	Balance Sheet 2007	SV-0037169-0037170	
P-519	Profit and Loss 2008	SV-0037171-0037173	

P-520	Balance Sheet 2008	SV-0037174-0037175	
P-521	Profit and Loss 2009	SV-0037176-0037178	
P-522	Balance Sheet 2009	SV-0037179-0037180	
P-523	Profit and Loss 2010	SV-0037181-0037183	
P-524	Balance Sheet 2010	SV-0037184-0037185	
P-525	Profit and Loss 2015	SV-0037186-0037188	
P-526	Sales by Item Summary April 2015	SV-0037189-0037190	
P-527	Insert of area covered by CSD flood vent by model	SV-0037191	
P-528	Profit and Loss Dec 2014	SV-0037192-0037196	
P-529	Sales by Item Summary Dec 2014	SV-0037197-0037200	
P-530	Sales by Item Summary Feb 2015	SV-0037201-0037202	
P-531	Smart Vent Paid to ICC-ES	SV-0037203-0037204	
P-532	Sales by Item Summary Jan 2015	SV-0037205-0037206	
P-533	Sales by Item Summary March 2015	SV-0037207-0037208	
P-534	Sales by Item Summary Nov 2014	SV-0037209-0037210	
P-535	Sales by Item Summary Oct 2014	SV-0037211-0037212	
P-536	Sales by Item Summary	SV-0037213-0037218	
P-537	Sales by Item Summary 2010	SV-0037219-0037221	
P-538	Sales by Item Summary 2011	SV-0037222-37224	
P-539	Sales by Item Summary 2012	SV-0037225-0037226	
P-540	Sales by Item Summary 2013	SV-0037227-0037229	
P-541	Sales by Item Summary 2007	SV-0037230-0037231	
P-542	Sales by Item Summary 2008	SV-0037232-0037233	
P-543	Sales by Item Summary 2009	SV-0037234-0037236	
P-544	Sales by Item Summary 2010	SV-0037237-0037239	
P-545	Profit and Loss 2010	SV-0037240-0037243	
P-546	Transaction Detail by Account 1/1-6/29/15	SV-0037244-0037249	
P-547	Email Clifford Oliver to Mike Graham 6/16/14	SV-0037250	
P-548	ICC ES Legacy Report 7/01/05	SV-0033642-0033667	
P-549	ICC ES evaluation report 2/1/08	SV-0034773-0034776	
P-550	SV ICC-ES Legacy Report NER-624	SV-0035382-0035383	
P-551	ICC ES Report	SV-0036351-0036354	
P-552	ICC-ES Evaluation Report 2/1/11	SV-0036632-0036633	
P-553	ICC-ES Report 2/1/09	SV-0036780-0036781	

P-554	ICC ES Report Flood Solutions 3/15	SV-0037266	
P-555	Lowest Floor Guide 10/1/09	SV-0037270	
P-556	Service attempts on Stacey Hart 1/29/16	SV-0037273-0037275	
P-557	Profit and Loss financial 2015	SV-0037276-0037279	
P-558	Sales by Item Summary financial 2010	SV-0037280	
P-559	Crawl Space Doors website captured on 3/16/18	SV-0037283-0037300	
P-560	Certification Steve Geci Alabama 11/29/17	SV-0037301	
P-561	Certification Delmer Hamilton Colorado 4/17/17	SV-0037302	
P-562	Certification J. Stacey Hart Delaware 11/27/17	SV-0037303	
P-563	Certification Geci Florida 11/29/17	SV-0037304	
P-564	Certification House Georgia 12/1/17	SV-0037305	
P-565	Certification Cenac Louisiana 11/20/17	SV-0037306	
P-566	Certification Hart Maryland 11/27/17	SV-0037307	
P-567	Certification Michael Cenac Mississippi 11/20/17	SV-0037308	
P-568	Certification House North Carolina 11/17/17	SV-0037309	
P-569	Certification House South Carolina 11/17/17	SV-0037310	
P-570	Certification Swiderski New Jersey 11/10/17	SV-0037311	
P-571	Certification House South Carolina 11/17/17	SV-0037312	
P-572	Certification House Tennessee 11/17/17	SV-0037313	
P-573	Certification House Texas 11/17/17	SV-0037314	
P-574	Certification Loney Virginia 11/12/17	SV-0037315	
P-575	CSD Video	SV-0037316	
P-576	Profit and Loss financial Jan 16- Feb 18	SV-0037317-0037340	
P-577	Excel spreadsheet – Sales by item	SV-0037341	
P-578	Amazon.com pages selling CSD vents	SV-0037342-0037347	
P-579	Cert on Amazon.com page	SV-0037348	
P-580	Website for The Digerati group	SV-0037349-37354	
P-581	CSD Statement of revenue and expenses 1/10-12/14	CSD00038090-00038091	
P-582	P&L Jan-Dec 2015	CSD00038092-00038095	
P-583	P&L Jan-Dec 2016	CSD00038096-00038099	
P-584	P&L Jan- Dec 2017	CSD00038100-00038104	
P-585	Letter to F. House re: needing an up to date certification	CSD00000407-00000410	
P-586	Oliver to Sykes	CSD00000610-00000614	
P-587	Cost and profit spreadsheet	CSD00001925-00001942	

P-588	Cost and profit spreadsheet	CSD00003205-00003220	
P-589	Cost and profit spreadsheet	CSD00003221-00003225	
P-590	Sykes email to David Trent @ JR Manufacturing with AC364 IC Testing Info attached	CSD0003961-0003962	
P-591	Emails Jackie and Sykes about certifications	CSD00011053-00011055	
P-592	Email Sykes to Ranney with cert from Tennessee.	CSD00013928-13929	
P-593	Email Sykes to Harry Girdler about certifying vents in Kentucky w/Reichard info attached.	CSD00016822-00016846	
P-594	Email from Harry Girdler about Kentucky certifications	CSD00016847-00016851	
P-595	Email Sykes to Smart Vent asking for price on vents and if vents can be used for flood vents	CSD00022253	
P-596	Email Sykes to Chris with vent measurements	CSD00022264- 00022265	
P-597	Google adwords	CSD00022254-00022256	
P-598	Email Sykes to Kristi at Gibraltar explaining why certifications were changed	CSD00015852-00015864	
P-599	Email from Harry Girdler about whether CSD vents are FEMA accepted	CSD00027138	
P-600	Email Reichard to Sykes about engineer requirements to see property with new certification	CSD00027762-00027763	
P-601	Email Sykes to Nick Potocska	CSD00027975	
P-602	Email exchange between Doug Davinroy of Flood Flaps and William	CSD00036335-36337	
P-603	Sykes to Davinroy of Flood Flaps	CSD00036324-00036325	
P-604	Flood Flaps product guide- FEMA accepted	CSD000363304	
P-605	CSD model 816CS		
P-606	CSD model 1220CS		
P-607	CSD model 1232CS		
P-608	CSD model 1616CS		
P-609	CSD model 1624CS		
P-610	CSD model 1632CS		
P-611	CSD model 2032CS		
P-612	CSD model 2424CS		
P-613	CSD model 2436CS		

P-614	Documents concerning Crawl Space Doors' amended certifications produced by Defendant on May 31, 2018 in accordance with Judge Williams' Order	CSD00038105-00038460	
P-616	Email Sykes to Reichard dated 4/9/12	CSD 27748	
P-617	Email Sykes to Reichard dated 4/23/12	CSD 27757 and Reichard-responsive documents to subpoena	
P-618	Email Sykes to Reichard dated 1/31/12	CSD 27726	
P-619	Email Sykes to Reichard dated 3/24/12	CSD 27742	
P-620	Letter from William Coulbourne to Mike Graham dated 1/23/14	SV 27544	
P-621	Smart Vent tax return 2006 – Federal	SV 33267, et seq	
P-622	Smart Vent tax return 2011 – Federal	SV 33371, et seq	
P-623	2007 Tax Returns for Smart Vent	SV 33618, et seq	
P-624	2011 Income Tax Return – SmartVent Products, Inc.	SV 33939, et seq	
P-625	Smart Vent 2012 tax returns	SV 34453, et seq	
P-626	Smart Vent 2008 taxes	SV 34498, et seq	
P-627	Smart Vent 2014 taxes	SV 34545, et seq	
P-628	Smart Vent 2013 taxes	SV 34634, et seq	
P-629	Smart Vent 2008 taxes	SV 34702, et seq	
P-630	2009 Smart Vent taxes	SV 34754, et seq	
P-631	2007 Crawl Space Doors taxes	CSD 38045, et seq	
P-632	2008 Crawl Space Doors taxes	CSD 38061, et seq	
P-633	2009 Crawl Space Doors taxes	CSD 38074, et seq	
P-634	2010 Crawl Space Doors taxes	CSD 38089, et seq	
P-635	2011 Crawl Space Doors taxes	CSD 38108, et seq	
P-636	2012 Crawl Space Doors taxes	CSD 38134, et seq	
P-637	2013 Crawl Space Doors taxes	CSD 38152, et seq	
P-638	2014 Crawl Space Doors taxes	CSD 38162, et seq	
P-639	CSD Spreadsheet of profits and costs, 9/4/2010	CSD 2965-2966	
P-640	CSD Financial worksheet 1/29/04	CSD 2999-3024	
P-641	CSD Units sold comparison 2006 – 2013	CSD 35688-35693	
P-642	Email Sykes to Mike Speciale 7/18/14	CSD 20828-20830	
P-643	Smart Vent vent 1540-510		

P-644	Smart Vent flood vent 1540-520		
P-645	Smart Vent wood wall model 1540-570		
P-646	Tom Little statement dated June 30, 2015, with attachments		
P-647	John Miller report dated June 30, 2015, with attachments		
P-648	John Miller report dated March 11, 2016, with attachments		
P-649	John Miller report dated April 16, 2018, with attachments		
P-650	Richard Crago report dated June 30, 2015, with attachments		
P-651	Richard Crago report dated March 11, 2016, with attachments		
P-652	Richard Crago report dated April 16, 2018, with attachments		
P-653	Eli Segev report dated March 11, 2016, with attachments		
P-654	Report of Dana Smith/Eisner Amper dated June 30, 2015, with attachments		
P-655	Report of Dana Smith/Eisner Amper dated March 11, 2016, with attachments		
P-656	Report of Dana Smith/Eisner Amper dated April 16, 2018, with attachments		
P-657	Statement of William Sykes dated March 11, 2016		
P-658	Declaration of William Sykes dated November 4, 2016		

EXHIBIT	DESCRIPTION	BATES	ECF #
P-659	Exhibit B to Declaration of Anthony DiMarino in Support of Motion for reconsideration – screenshot of CSD website captured 8/27/16		97-6
P-660	Email Gary M. Hochschild to CSD dated 11/11/14	CSD00035852	
P-661	Email Samuel R. Brown II and William Sykes dated 12/26/14	CSD00035765-35772	
P-662	Plea in Bar of Defendant Alzuro in Case No. CL14-4979	CSD00036050-36046	
P-663	Email William Sykes, Chris at CSD and Jake at CSD dated 12/31/14	CSD00036174-36177	
P-664	Email Chris to William Sykes with Business Plan draft dated 11/2/14	CSD00036309-36313	
P-665	Email Chris at CSD to William Sykes with Units Sold Comparisons for 2006-2014	CSD00037343 and attached excel spreadsheet	



P-666	Summary of Flood vent sales 9/24/07-5/13/15	CSD00038043	
P-667	Screenshots of CSD website	SV000468, SV000723-732, SV000898, SV035502, SV037289, SV037291, SV037293	

DISCOVERY

EXHIBIT	DESCRIPTION	BATES
P-668	Smartvent Products, Inc. Profit and Loss 1/2016 through 3/2019	SV037355-37370
P-669	Smartvent Products, Inc. Sales by item	SV037371
P-670	CSD Financial Information	CSD 38465 - 38468
P-671	CSD Sales Information	CSD 38469 - 38470
P-672	Screenshots of Youtube videos	SV 37372-37393

DISCOVERY

EXHIBIT	DESCRIPTION	BATES
P-673	CSD Financial Info to be updated through the date of trial	



**EXHIBIT “H”**

Crawl Space objects to the Exhibits listed below as indicated:

P-9 Hearsay

P-10 Hearsay

P-11 Hearsay

P-54 Hearsay

P-72 Hearsay

P-73 Hearsay

P-77 Hearsay

P-80 Hearsay

P-83 Hearsay

P-103 Hearsay

P-107 Hearsay

P-109 Hearsay

P-112 Hearsay

P-113 Hearsay

P-124 Hearsay (pages Swiderski 38-81, 86-87, 95-100, 102-107, 108-111, 115-133)

P-126 Hearsay

P-162 Hearsay (pages Cenac 32-33, 61, 65-66, 72-73, 173-174, 176-179)

P-243 Hearsay

P-282 – P-298 Hearsay

P-299 Not relevant to any claims or defenses in this litigation

P-300 (Exhibit K SUNVENT 412, Exhibit L SUNVENT 413-419,) Hearsay

P-346 Hearsay

P-347 Hearsay

P-348 Hearsay

P-349 Hearsay

P-406 Hearsay

P-436 Hearsay

P-445 Hearsay

P-554 Hearsay; Not relevant to any claims or defenses in this litigation

P-556 Hearsay

P-599 Hearsay

P-615 Attorney-Client Privilege and/or Work Product Doctrine

P-620 Hearsay

Crawl Space objects to the Exhibits listed below because they are not relevant to any claims in this case.

P-643-645

P-661 – 663

Crawl Space Doors objects to the Exhibits below because they all pertain to events that occurred in 2017 or 2018 after Smart Vent filed its Amended Complaint on August 30, 2016. These exhibits are only relevant, if at all, to the issue of whether Crawl Space Doors is in violation of the permanent injunction, which is an issue for the Court not the jury.

P-381

P-384 – 385

P-555

P-578 - P-580

Crawl Space objects to admission of the entirety of the reports below

P-646 – P-656

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## **CRAWL SPACE DOORS' EXHIBIT LIST**

### **EXHIBIT "I"**

- D-1 - First Amended Complaint
- D-2 - Code of Federal Regulations for the National Flood Insurance Program
- D-3 - Excerpts from the Court's Opinions determining Crawl Space's flood Vents are FEMA compliant
- D-4 - Plaintiff's Objections and Answers to Defendant's First Set of Interrogatories
- D-5 - Plaintiff's Objections and Answer to Defendant's Second Set of Interrogatories
- D-6 - Plaintiff's Objections and Answer to Defendant's First Request for Admissions
- D-7 - Crawl Space Doors' Answer to Amended Complaint and Counterclaims
- D-8 - Smart Vent's Answer to Counterclaims
- D-9 - U.S. Design Patent D448, 489 S
- D-10 - U.S. Design Patent D446, 317 S (CSD00036844-49)
- D-11 - U.S. Design Patent D583, 042 S (CSD00036850-57)
- D-12 - U.S. Design Patent D607, 098S (CSD00036872-75)
- D-13 - U.S. Design Patent D654, 162S
- D-14 - Excerpts from Smart Vent web site listed in Crawl Space Doors' Answer to First Amended Complaint, Affirmative Defenses and Counterclaims at ¶¶ 27, 59, 66, and 75
- D-15 - Definition of the word "smart" as referenced in Crawl Space Doors' Answer to First Amended Complaint, Affirmative Defenses and Counterclaims at ¶ 125 available at "Smart." Merriam-Webster.com, Merriam-Webster, [www.merriam-webster.com/dictionary/smart](http://www.merriam-webster.com/dictionary/smart).
- D-16 - Article published on [www.theverge.com](http://www.theverge.com) referenced in Crawl Space Doors' Answer to First Amended Complaint, Affirmative Defenses and Counterclaims at ¶ 128 available at <https://www.theverge.com/2014/6/7/5786668/the-best-smart-home-products-you-havent-heard-of>
- D-17 - Website advertisement for DCi Products' smart vent referenced in Crawl Space Doors' Answer to First Amended Complaint, Affirmative Defenses and Counterclaims at ¶ 131 available at <https://dciproducts.com/smartvent-attic-ventilation/>

D-18 - Website advertisement for Keen Home's smart vent referenced in Crawl Space Doors' Answer to First Amended Complaint, Affirmative Defenses and Counterclaims at ¶ 132 available at <https://keenhome.io/pages/how-it-works>

D-19 - Crawl Space Doors Advertisements (CSD00035584-85, CSD00035588-90, and CSD00035591)

D-20 - Crawl Space Doors Advertisement (CSD00035586-87)

D-21 - Photograph of Crawl Space Doors' flood vent (CSD00035583)

D-22 - Nunes video previously available on Smart Vent's website

D-23 - Excerpts from Crawl Space Doors' web site (SV-0000459-463, SV-0000738-742, SV-00764-768)

D-24 - Smart Vent trademark (SV-0036118-192)

D-25 - Metatags from prior version of Crawl Space Doors' website (SV-0035836-850)

D-26 - Graham/Coulbourne emails (SV-0027882-83)

D-27 - Little/Graham/Shaw emails (SV-0028209-SV002811)

D-28 - Shaw/Fryklund emails (SV-0018634-0018636)

D-29 - Google search results for "smart vent"

D-30 - Fryklund/Graham/Shaw emails (SV-0003817-003818)

D-31 - Smart Vent Press Release (December 15, 2017)

D-32 - Graham/Ingargiola emails (SV-0030740-30744)

D-33 - FEMA study (SV-0018130-132)

D-34 - Smart Vent Ads claiming "FEMA Accepted" (SV-0005443, SV-0009700-9703, SV-0033491, and SV-0034184)

D-35 - Smart Vent Ads claiming patented float releases (SV-0010761-62, SV-0018964-65)

D-36 - Smart Vent web site analysis (SV-0003819-SV-0003862)

D-37 - Alexander/Little emails warning MD official about Crawl Space Doors (SV-0029236-242)

D-38 - Smart Vent newsletter distributing Nunes video (SV-0004090-SV-0004099)



D-39 - Little/Snyder emails re bill board campaign against Crawl Space Doors (SV-0032889-890)

D-40 - Graham/Little/Shaw emails congratulating sales staff on good work despite FEMA reprimand (SV-0030745-48)

D-41 - U.S. patent 6,692,187 B2 (SV-0000406-430)

D-42 - U.S. patent 6,287,650 B1 (SV-0000114-127)

D-43 - Record from USPTO Full-Text and Image Database for U.S. patent 5,944,445 (Exhibit 38 to Smart Vent 30(b)(6) deposition)

D-44 - U.S. patent 6,485,231 B2 (SV-0000261-279)

D-45 - Little/Jernigan emails re non-compliance reports (SV-0031933)

D-46 - Documentation of unacceptable flood openings, measures and certifications (SV-0031934-0031958)

D-47 - Non-engineered opening guide Vol. 1/Jan. 2015 (SV-0001780-1807)

D-48 - Non-engineered opening guide Vol. 2/Nov. 2015 (Exhibit 7 to Smart Vent 30(b)(6) deposition)

D-49 - Beware Crawl Space Doors email/surveyors beware (Exhibit 9 to Smart Vent 30(b)(6) deposition)

D-50 - Little email to sales staff re CSDS and flood solutions (SV-0031239)

D-51 - Nunes script (Exhibit 20 to Smart Vent 30(b)(6) deposition)

D-52 - Emails re June Web Report (SV-0018634-36)

D-76 - You Tube Video- Keen Home Smart Vent and Keen Home Smart Vent Website

### **Correspondence**

D-77 - FEMA correspondence to Sykes 9/21/2005 (CSD00037432 –35)

D-78 - FEMA Q and A (CSD00036157 – 163)

D-79 - CSDS cease and desist letter to Smart Vent (SV-0033507-08)

D-80 - Photo of Smart Vent packaging FEMA accepted (Exhibit 26 to Smart Vent 30(b)(6) deposition)

D-81 - Graham/Quinn emails re FEMA accepted (SV-0033782)

- D-82 - FEMA correspondence 11/21/03 (SV-0009857-58)
- D-83 - SV/FEMA correspondence 6/16/2004 (SV-0033224-25)
- D-84 - USA flood air vents cease and desist letter to Graham (SV-0034136-39)
- D-85 - Graham email to staff re FEMA acceptance (SV-0034149)
- D-86 - Draft Graham email to FEMA re FEMA acceptance (SV-0033264)
- D-87 - Ingargiola email stating FEMA “doesn’t approve Smart Vent’s product.” (SV-0034139)
- D-88 - Smart Vent article stating Smart Vent is the only “FEMA accepted foundation flood vent on the market.” (SV-0031145-47)
- D-89 - Graham email to FEMA reporting on USA flood vents and Crawl Space Doors (SV-0035339-40)
- D-90 - Little email advising North Carolina official that Crawl Space Doors’ flood vents are inadequate (SV 0032025-32026)
- D-91 - Cease and desist letter to Smart Vent dated December 11, 2012
- D-92 - March 13, 2015 email from Chris Qualtieri to William Sykes re: Brendan Kane of Smart Vent to Sonya at Atlantic Surveying distributing non-engineered opening guide (CSD00036378-00036408)
- D-93 - Expert report of Dr. James Rice
- D-94 - Expert Report of Robert Wallace
- D-95 - Crawl Space Doors flood vents.

**Exhibit J**

**PLAINTIFF'S OBJECTIONS TO  
DEFENDANT'S EXHIBIT LIST FOR PRE-TRIAL CONFERENCE**

**SMART VENT V. CRAWL SPACE DOORS**

1. Smart Vent objects to all of the following exhibits because they were not produced in accordance with Fed. R. Civ. P. 26 and the discovery schedule, including because the following were not produced and identified with corresponding bates numbers.

Defendant's exhibits 29, 31, and 76.

2. Smart Vent objects to the following exhibits based on relevance.

Defendant's exhibits 16-18, 29, 30, 36, 37, 39, 41-44, 45, 50-52, 76, 77, 81, and 89-91.

3. Smart Vent objects to the following exhibits because they constitute inadmissible hearsay.

Defendants' exhibits 16-18, 21-23, 29, 30, 36, 37, 76, 79, 81, 87, and 91.

# Exhibit “G”



# ***Crawl Space Doors As Seen On The Internet Don't Be Mislead***

This is a Non-Engineered Opening with a photo copy  
certification with incorrect calculations

CSD000040059

**P681-1**

# *First Lets Remember Why Flood Vents Are Critical in Floodplain Construction*

NFIP Insurance, Pg. 4 Tb-1

## **How Openings Affect Flood Insurance Rates**

Careful attention to compliance with the NFIP regulations for flood openings is important during design, plan review, construction, and inspection. Compliance influences both the vulnerability to flood damage and the cost of NFIP flood insurance. If openings are not compliant, the floor of the crawlspace or the floor of the enclosure becomes the "lowest floor." In those cases, the result may be significantly higher flood insurance premiums, especially if the floor of the crawlspace or enclosure is more than a foot or two below the BFE.

Hydrostatic Relief to prevent Structural Collapse and in riverine areas and places like Houston, No-Adverse Impact



CSD000040060

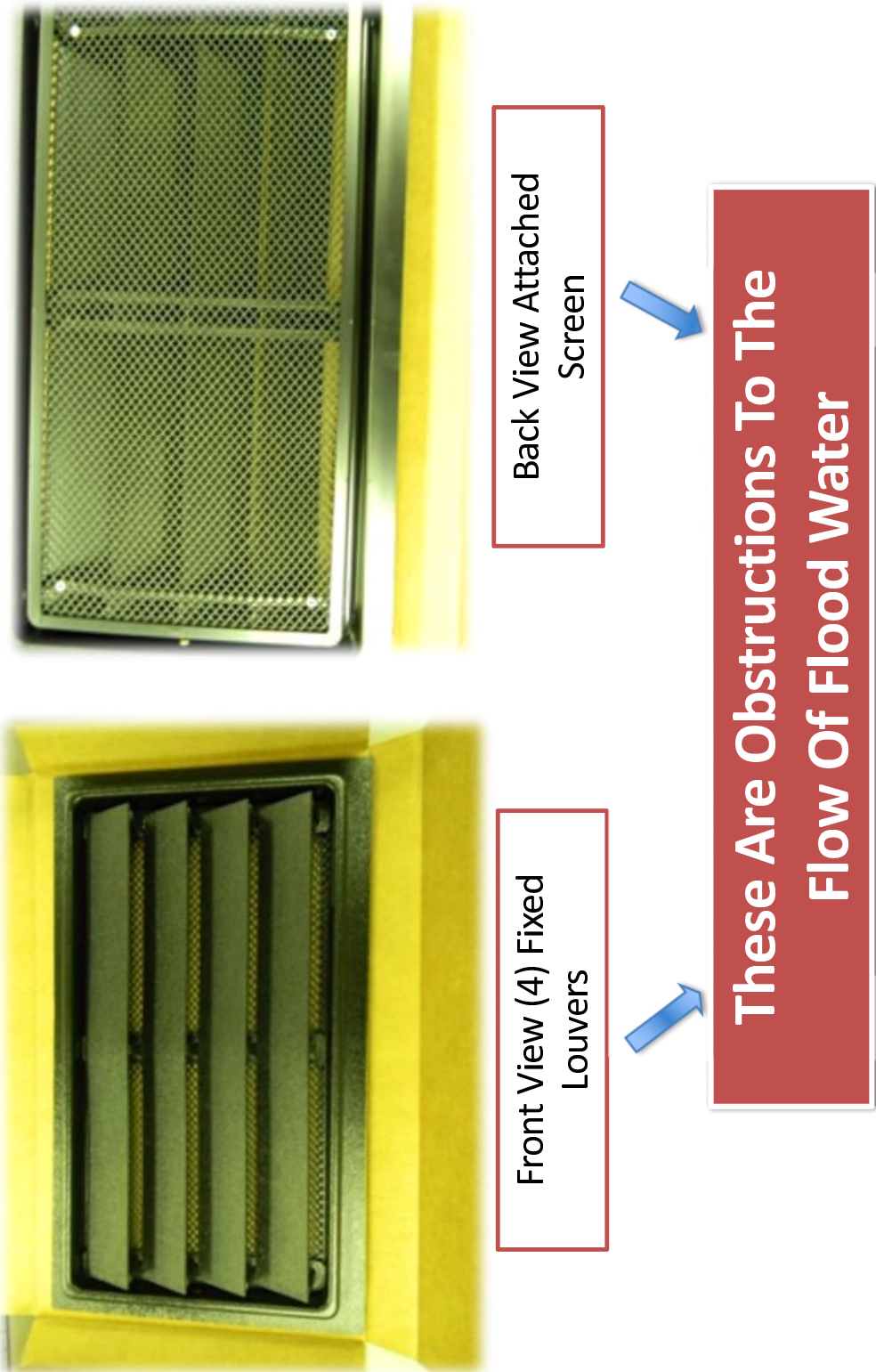
P681-2

**P681-3**



**Engineered Opening Calculations**

In 2011 they provided calculations for their 230 sq.ft claim, in the calculations they used the coefficient of discharge (CD) of .40, this CD is for a rectangular opening that is unobstructed during a design flood. The below pictured vent clearly has obstructions.



CSD000040062



# Things they got wrong

## Certification of Engineered Flood Openings (TB 1 – August 2008)

I do hereby certify that the CRAWLSPACE FLOOD FLOOD LOUVER, Patent No. US D683,042 S, dated December 16, 2008 and owned by Crawl Space Door Systems, Inc., properly installed and sized in accordance with Federal Emergency Management Agency's National Flood Program regulations (44 CFR 60.3(c)(5)) and National Flood Insurance Program, Technical Bulletin (TB) 1-August 2008 is designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for entry and exit of floodwater during floods up to and including the base (100-year) flood.

I also do hereby certify that I calculated the Non-Engineered, and Engineered Opening size for each model and size of the Flood Louvers. The results of the calculations are recorded in the table below. The Engineered size opening calculation was performed by using the formula in FEMA Technical Bulletin 1 / August 2008, Openings in Foundation Walls for Buildings Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program and ASCE/SEI 24-05 Flood Resistance Design and Construction. The Net-Free Air opening size for each model was provided by the manufacturer. I used the formula  $[A^* = 0.033 (1/C) R \text{ in TB 1 - Aug. 2008}]$  to determine the Engineered opening size for each model. I used the following assumptions:  $A^*$ =total net area of openings required ( $\text{in}^2$ ); 0.033 = coefficient corresponding to a factor of safety of 5.0 ( $\text{in}^2 \cdot \text{hr}/\text{ft}^3$ );  $C = 0.40$  opening coefficient (ASCE 24 Table 2-2 "rectangular, long axis horizontal, short axis vertical unobstructed during design flood";  $c = 0.35$  opening coefficient square; there is an unobstructed rectangular shape between the louvers);  $R = 5 \text{ ft/hr}$  maximum case rate of rise and fall; and  $A_e$  = total enclosed area.

$$A^*/A_e = 0.033[1/C]R = 0.033[1/0.40] = 0.4125 \text{ in}^2 \text{ per ft}^2 \text{ enclosed area}$$

$$\text{Example: } D0816: = 95 \text{ in}^2 / 0.4125 \text{ in}^2 \text{ per ft}^2 = 230 \text{ ft}^2$$

Model #	Size (100W)	Non-Engineered (Sq. Inches)	Net-Free Air (Sq. Inches)	Enclosed Area (Sq. Ft)
D0816	8" x 16"	128	95	230
D1220	12" x 20"	240	175	424
D1232	12" x 32"	384	290	703
D1616	16" x 16"	256	200	423
D1624	16" x 24"	384	295	691

CSD000040063

Certification of Engineered Flood Openings

In accordance with the Code of Federal Regulations for the National Flood Insurance Program I hereby certify that the **Crawl Space Door Systems** flood vents **816KCS, 1220KCS, 1616KCS, 1834KCS, 2032KCS, 2424KCS, and 2436KCS** are designed in accordance with the requirements of the Code of Federal Regulations for the National Flood Insurance Program (NFIP) to provide automatic equalization of hydrostatic fluid forces by allowing for the entry and exit of floodwaters, when properly installed and used as set forth below. Vent opening measurements were measured and certified by Mr. Christopher Mark Loney, Virginia P.E. NO. 122000. Detailed calculations were prepared as outlined in "Review of Certification of Engineered Flood Openings," prepared by Dr. Georg Reckhardt, Associate Professor of Building Construction, Virginia Tech (available upon request from Crawl Space Door Systems, Inc. [billy@crawlspacedoors.com](mailto:billy@crawlspacedoors.com)).

Design Characteristics

Section 2.6.2.2 of ASCE/SEI 24-05 provides an equation to determine the required net area of engineered openings (A<sub>n</sub>) for a given floodwater depth (A<sub>w</sub>). This equation is based on the hydraulic formula for the flow rate across sharp edged orifices. I have utilized this equation to calculate 1) the restricted flow rate through the main frame opening in case the louver is blown out during a flood event; 2) the flow rate through the individual openings between louver blades; and 3) the flow rate through projected openings between louver blades following hydraulic short tube theory. The maximum total enclosed area (A<sub>e</sub>) that can be serviced by a single vent has then been determined by utilizing the lowest flow rate of the three assessed scenarios for each vent and is listed in Table 1. These values are based on the following assumptions:

- In absence of reliable data, the rates of rise and fall have been assumed at a minimum rate of 5 feet/hour;
- The (maximum) difference between the exterior and interior floodwater levels shall not exceed 1 foot during base flood conditions;
- A factor of safety of 5 has been assumed, which is consistent with design practices related to protection of life and property;
- The net area of openings (A<sub>n</sub>) as provided by the manufacturer.

Installation Requirements and Limitations

This certification will be voided if the following installation requirements and limitations are not enforced:

- There shall be a minimum of two openings on different sides of each enclosed area subject to flooding;
- The location of all openings shall be no higher than one foot above the higher of the interior or exterior grade that is immediately under each opening;
- No temporary (e.g. during cold weather) or permanent solid cover may be placed into or over the flood vent that would block the automatic entry or exit of floodwaters at any time;
- Where data or analyses indicate more rapid rates of rise and fall, the required number of openings shall be increased to account for those different conditions. The number or size of the openings may be decreased if data or analyses indicate rates of rise and fall are less than 5 feet per hour.

Certifying Design Professional

Name	WILLIAM S. SWIDERSKI, P.E.	Title	ENGINEER
Company	SWIDERSKI ASSOCIATES		
Address	599 SHORE ROAD SOMERS POINT, NJ		
License	PROFESSIONAL ENGINEER	License No.	24GE02048200
Signature:		Date:	11-10-17

Identification of the Building and Installed Flood Vents (By Others)

The flood vent models marked in Table 1\*) are being installed at the following building:  
Building Address \_\_\_\_\_

Most recent non-compliant certification doesn't even state the coefficient of discharge they used. Which should have been .20. You will read on the cert the that the signing engineer received the net area from the manufacturer which is incorrect at the stated 105 sq.in. The vent only provides 44 sq.in.

At the very bottom you will read building address, where someone would hand write their address in. Not compliant.

CSD000040064

# Partially Obstructed ASCE 24-14 Page 10

Table 2-2 Flood Opening Coefficient of Discharge<sup>a</sup>

Opening Shape and Condition	<i>C</i>
All shapes, partially obstructed during design flood <sup>b</sup>	0.20
Circular, unobstructed during design flood	0.60
Rectangular, long axis horizontal, short axis vertical, unobstructed during design flood	0.40 <sup>c</sup>
Square, unobstructed during design flood	0.35
Rectangular, short axis horizontal, long axis vertical, unobstructed during design flood	0.25 <sup>d</sup>
Other shapes, unobstructed during design flood	0.30

<sup>a</sup>Different coefficients of discharge shall be permitted: (1) where a designer has performed detailed, opening-specific calculations, a coefficient of discharge up to 10% different than given in Table 2-2 shall be permitted; or (2) where laboratory testing or numerical modeling of flow through the opening has been conducted, the resulting coefficient of discharge shall be permitted. In no case shall a coefficient of discharge >0.60 be permitted.

<sup>b</sup>Openings shall be classified as partially obstructed if louvers, blades, screens, grilles, faceplates, or other covers or devices are present during the design flood.

<sup>c</sup>When the horizontal dimension is twice or more the vertical dimension, use 0.4; as the dimensions approach a square, interpolate from 0.4 to 0.35.

<sup>d</sup>When the horizontal dimension is half or less the vertical dimension, use 0.25; as the dimensions approach a square, interpolate from 0.25 to 0.35.

<sup>b</sup>Openings shall be classified as partially obstructed if louvers, blades, screens, grilles, faceplates, or other covers or devices are present during the design flood.



CSD000040065

Coefficient of Discharge Charts

Unobstructed!

From ASCE 24, the equation to determine area of engineered openings:

$$A_o = 0.033 [1/c] R A_p$$

Where:  $A_o$  = total net area of openings required (in<sup>2</sup>)  
0.033 = coefficient corresponding to a factor of safety of 5.0 ( $in^2 \cdot ft/hr$ )  
 $c$  = opening coefficient (non-dimensional; see ASCE 24, Table 2-2)  
 $R$  = worst case rate of rise and fall (ft/hr)  
 $A_p$  = total enclosed area (ft<sup>2</sup>)

Opening Shape and Condition	$c$
circular, unobstructed during design flood	0.60
rectangular, long axis horizontal, short axis vertical, unobstructed during design flood	0.40 <sup>a</sup>
square, unobstructed during design flood	0.35
rectangular, short axis horizontal, long axis vertical, unobstructed during design flood	0.25 <sup>b</sup>
other shapes, unobstructed during design flood	0.30

Notes:

a. When the horizontal dimension is twice or more the vertical dimension, use 0.4; as the dimensions approach a square, interpolate from 0.4 to 0.35.

b. When the horizontal dimension is half or less the vertical dimension, use 0.25; as the dimensions approach a square, interpolate from 0.25 to 0.35.

Used with permission from ASCE.

Table 2-2. Flood Opening Coefficient of Discharge

Opening Shape and Condition	$c$
Circular, unobstructed during design flood	0.60
Rectangular, long axis horizontal, short axis vertical, unobstructed during design flood	0.40 <sup>a</sup>
Square, unobstructed during design flood	0.35
Rectangular, short axis horizontal, long axis vertical, unobstructed during design flood	0.25 <sup>b</sup>
Other shapes, unobstructed during design flood	0.30

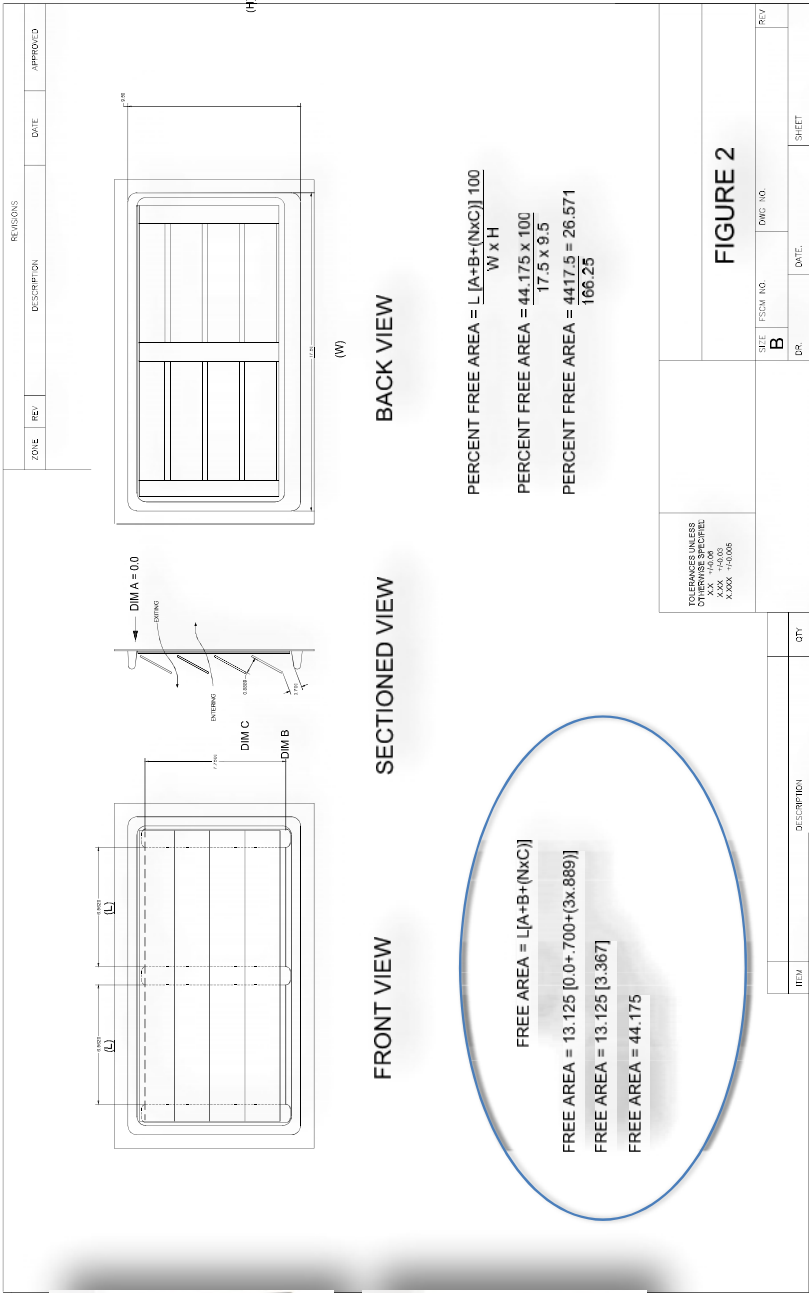
Page 12 ASCE 24-05



**Not** Unobstructed  
During Design Flood

Page 27 TB-1





Material: Black Plastic  
Width: 17.5 inches  
Height: 9.5 inches

They claim the net free area is 105 sq.in but  
its only 44 sq.in

Manufacturer's Net Open Area Measurement: 105 SQ. Inches  
Calculated Net Open Area Measurement: 44 SQ. Inches

Manufacturer: Crawl Space Doors <http://www.crawlspacedoors.com/catalog/flood-vent-nonengineered-16-p-102.html?osCsid=ncd716ium1jfpd2602i877pag1>

CSD00040067

P681-9

## *IRC & IBC Note*

*Air Vent Devices will always be classified as Non-Engineered Openings because they are required by the International Code Council's IRC R408.2 & IBC 1203.3.1 to be covered for the width and height of the opening with a rodent screen.*

*This covering and other louvers, blades, grills and faceplates put air vents into a partially obstructed category which carries a coefficient of discharge of .20. Using .20 in the calculations yields  $A = .83 \text{ sq.in}$  for every 1 sq.ft of area which is rounded to 1 sq.in of net open area for every 1 sq.ft of enclosed space. Classified as Non-engineered openings by FEMA, ICC, & ASCE 24.*

CSD000040068

# Net Area Coverage Formula: ASCE 24-14, pg. 10

6. The minimum total net area of the required openings in enclosure walls shall be calculated using the equation

$$A_o = 0.033 (1/c)(R)(A_e)$$

where

$A_o$  = the total net area of openings required (in.<sup>2</sup>)

0.033 = coefficient (in.<sup>2</sup> · h/ft<sup>3</sup>) corresponding to a factor of safety of 5.0

$c$  = opening coefficient of discharge given in Table 2-2

$R$  = worst case rate of rise and fall (ft/h)

$A_e$  = the total enclosed area (ft<sup>2</sup>).

CSD00040069

# Running the Math

*This covering and other louvers, blades, grills and faceplates put air vents into a partially obstructed category which carries a coefficient of discharge of .20. Using .20 in the calculations yields A= .83 sq.in for every 1 sq. ft. of area which is rounded to 1 sq. in. of net open area for every 1 sq. ft. of enclosed space.*

Ao=.033(1/c)(R)(Ae)=.82in2			
		c=Cd	R=5 ft hr
	Ao=safety factor	0.2	
	0.033	5	5
			Ae=Enclosed area in ft
			0.825

FEMA/Code Standards Call for 1 sq.in for every 1sq.ft



# Running the Formula for the Crawlspace Door Vent

Ao=.033(1/c)(R)(Ae)=.82in2				
		c=Cd	R=5 ft hr	Ae=Enclosed area in ft
Ao=safety factor	0.2			
0.033	5		5	0.825
		IN 2	Ae	
	44		0.825	53.33333333

CSD000040071

The Company Is Now Introducing The Same Product As A Non-Engineered Opening, *Same Exact Design*. Now they claim it will cover 100 sq.ft. Ask your self how can the same product be engineered and non-engineered



CSD000040072

# *What This Means*

- 2000 sq.ft crawlspace using their 2011 claimed 230 sq.ft per 16x8 vent would need: **9 Vents**
- 2000 sq.ft crawlspace using their present day claimed 205 sq.ft per 16x8 vent would need: **10 Vents**
- 2000 sq.ft crawlspace using their coming soon 100 sq.ft per 16x8 vent would need: **20 Vents**
- 2000 sq.ft crawlspace using their actual net open area 44 sq.in per 16x8 vent would need: **45 Vents**



2000 sq.ft crawlspace should  
have 45 vents



CSD000040073

P681-15

*Why don't they carry a ICC-ES report which is required  
for mass manufactured engineered flood vents.  
Because it Does Not Pass ICC-ES AC-364*



**3.2.6 & 3.2.7 AC-364**

The conditions of acceptance are that the AFFV shall unlatch and remain open, and the water level measured from the bottom of the vent opening shall not exceed a 1 foot difference between the two compartments.

CSD000040074



# Why It Failed

After ICC-ES AC-364 Testing Clogged with Debris



Obstructions to flow during design flood make this vent a Non-Engineered Opening and testing proves it



Pg. 19 Tb-1

The following requirements for installation apply regardless of whether engineered openings or non-engineered openings are used to satisfy the NFIP requirements (also see page 13, Requirements and Guidance for Installation of Openings):

- Each enclosed area must have a minimum of two openings; if there are multiple enclosed areas, each area must have openings in its exterior walls,
- The bottom of each opening must be no more than 1 foot above the higher of the interior or exterior grade immediately under the opening, and
- Any screens, grates, grilles, fixed louvers, or other covers or devices must not block or impede the automatic flow of floodwaters into and out of the enclosed area.

CSD000040075

# Summary

- If a home/building was constructed or retrofitted with these air vents at the manufactures claimed 230, 205 or 100 sq.ft coverage amounts it does not have adequate hydrostatic relief and is not meeting FEMA/NFIP standards.
- If you are going to accept unique project specific engineered opening certificates always check the coefficient of discharge. If the vent has a obstruction to flow e.g. screen, then it is to be considered a non-engineered opening only and would use the calculation 1 sq.in of net open area for every 1 sq.ft.
- A true Engineered Opening goes from being obstructed to unobstructed during a design flood. This typically is achieved with a mechanical operation.

## Example of a Engineered Opening

*Flood Door Closed and Locked  
meeting the IRC/IBC Rodent  
Screen Requirement*



*Flood water activates the Flood Door,  
Revealing unobstructed area for water & debris  
to flow through.*



CSD00040076

**P681-18**